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A Malayan Virus Disease of Fowls

By

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Records relating to diseases of poultry in Malaya are extremely scanty and vague. Prior to 1934 we have been unable to trace any detailed account of observations or investigations in this field. In the published Annual Reports of the Malayan Veterinary Departments, the earliest of which is for the year 1931, mention is made year by year of the enormous losses incurred among poultry as a result of epiornithic disease. Some confusion, however, seems to have existed as to the nature of the prevalent disease. In 1931 particular mention was made of fowl cholera in Penang and Province Wellesley, complicated, it is believed, in many cases by an intercurrent *Salmonella pullorum* infection. In 1932 fowl pox was stated to be the most common if not the only cause of heavy mortality among fowls. This disease was also referred to as "avian diphtheria" in the Report. The first mention of virus disease of Malayan poultry appears in the Report for the year 1934 in which a detailed account is given of a fowl disease in Perak to which the descriptive name "diphtheritic stomato-pharyngitis" was given pending the establishment of the specific identity of the disease. Similar epiornithics ascribed to a virulent, highly infective virus were recorded during the same year in different States and Settlements. In 1935 the investigation of an outbreak in Singapore evoked the observation that the Malayan virus disease of fowls bore certain resemblances to Newcastle disease. Kuppuswamy, in 1935, gave an account of a disease of poultry in Province Wellesley which resembled Newcastle disease and which was artificially inoculable to pigeons. Subsequent to the first record of its occurrence in 1934 this virus disease, or group of related virus diseases, have been incriminated throughout Malaya as the major cause of the enormous epiornithic mortality which continually recurs with devastating effect on the poultry population. This disease has been referred to variously as "diphtheritic stomato-pharyngitis," Newcastle disease, pseudo-fowl pest and so forth.

In Perak subsequent to the diagnosis of the virus disease, during a period of two years 40 outbreaks of disease were investigated in detail as they were reported from the field. In 35 of these outbreaks a conclusive diagnosis of "diphtheritic stomato-pharyngitis" was arrived at and in five, organisms of the *Pasteurella* group were detected associated with the infection. For various reasons, however, a diagnosis of fowl cholera was not acceptable. (As far as we are aware an organism corresponding in its pathogenicity and biochemical character to *Pasteurella aviseptica* has not been isolated from poultry in Malaya.)

From the evidence available it is not possible to come to any definite conclusion as to whether the local virus disease of poultry was introduced to Malaya during the last six or seven years or whether it had been in existence for an indefinite period prior to its recognition in 1934. We are inclined to believe, however, that the latter was the case for the following reasons:—

(*a*) An epiornithic disease of fowls of all ages spreading with extreme rapidity in infected flocks and associated with a mortality of from 90 per cent. to 100 per cent. has been present in all parts of Malaya for many years. It is recognized by all classes of people who have attempted to rear poultry. The extreme rapidity of the spread and the high rate of mortality are not suggestive of fowl cholera or of fowl pox.

(*b*) Critical examination of pathological material from outbreaks in the field during the last six years has shown that fowl cholera is not a common disease in Malaya, if indeed it occurs at all. The detection of bipolar staining cocco-bacilli in films prepared from the blood and organs of infected birds cannot be accepted as conclusive diagnostic evidence. Naturally acquired cases of the virus diseases have been encountered in which there was an intercurrent septicaemia suggestive of fowl cholera. It has also been possible to infect fowls in the incubation stage of the virus disease and induce a terminal septicaemia with a strain of *Pasteurella* which was avirulent for healthy birds. It is improbable therefore that prior to the detection of the virus disease in 1934 fowl cholera was widespread in Malaya, when a careful study of poultry disease has indicated its practical unimportance during the last six years.

(*c*) The symptoms of fowl cholera and those of the virus disease might readily be confused on superficial examination of infected flocks.

(*d*) Similarly the so-called diphtheritic form of roup said to be so prevalent in Malaya in 1932 and referred to as "fowl diphtheria" might readily enough have been wrongly diagnosed. The mouth lesions of that form of the virus disease referred to as "diphtheritic stomato-pharyngitis" may have misled the casual observer to a mistaken diagnosis of "fowl diphtheria" or roup.

IDENTITY OF THE MALAYAN VIRUS DISEASE

Following the discovery and investigation of Newcastle disease by Doyle in Great Britain in 1926 similar if not identical diseases were recorded by investigators in various parts of the world, particularly in India and the East. According to Picard (1928) a new virus disease of fowls made its appearance in Java in 1926 and spread rapidly throughout the Netherlands East Indies occasioning enormous losses. In the Philippines a similar disease was apparently introduced about 1928 and became widely disseminated (Rodier, 1928). The disease, which was later referred to as "Ranikhet disease," was discovered in India in 1927 and described by Edwards. In 1929 a disease believed to be Newcastle disease was reported in Ceylon (Crawford, 1930). In 1929, "Korean poultry disease" was identified with Newcastle disease (Konno, Ochi and Hashimoto, 1929).

Subsequently exchanges of virus were effected between investigators in various parts of the world and from the results of their cross-immunity tests it was concluded that the strains of virus from Great Britain, the Philippines, Java, Korea, Japan and India were immunologically indistinguishable from each other (Doyle, 1935).

Further cross-immunity tests were the means of distinguishing between Newcastle disease and fowl plague (Doyle, 1935).

From the results of preliminary investigations in Perak it was tentatively concluded that so-called diphtheritic stomato-pharyngitis was a separate pathological entity, since it differed from Newcastle disease in two apparently essential characters, namely, the occurrence of apparently constant diphtheritic lesions in the mouth and pharynx and the fact that the virus was non-pathogenic or only very slightly pathogenic for pigeons. As far as we are aware, diphtheritic lesions of the variety seen in Malaya have not been described in association with Newcastle disease and other immunologically identical infections. Newcastle disease is, moreover, highly pathogenic for pigeons. These features of the Malayan virus disease constituted what appeared, in the absence of conclusive experimental evidence, to be valid grounds for the tentative separation of "diphtheritic stomato-pharyngitis" and Newcastle disease. Later experiments conducted in Johore, however, have led to a revision of these conclusions. Briefly, it was observed that in certain outbreaks, though typical diphtheritic lesions were fairly constant, in other outbreaks the lesions were rare or entirely absent. These field observations were supported by experimental findings and it was concluded that, particularly in peracute cases, the absence of diphtheritic lesions was common. The immunological identity of a strain of virus obtained from an outbreak in which diphtheritic lesions were constant and of a strain which produced no such lesions was confirmed. The factors which evoke the emergence of diphtheritic lesions are not understood. Various strains of virus may occur in Malaya, or the virus may be subject to mutation as a result of certain conditions of passage, such mutations affecting, for example, the pathogenicity of the strain for pigeon and the occurrence of diphtheritic lesions. It is also probable that the diphtheritic lesions are caused by secondary infection.

Cross-immunity tests using various Johore strains, Penang strains, a Perak strain, and a Kedah strain, have established the immunological identity of the strains examined. Cross-immunity tests carried out later between a Johore "strain," a Netherlands East India "strain" and an English strain of Newcastle disease virus proved that they were immunologically indistinguishable. Serum-virus neutralization tests carried out with the Johore "strain" and English strain confirmed the above findings.

In India and a number of Eastern countries reference has been

* This paper was written in December, 1941, but owing to the Japanese invasion of Malaya, publication has been delayed. As we recently recorded, with much regret, Lieut.-Colonel W. Orr, who returned to Malaya immediately after the termination of the war, died in a motor accident.

made to the widespread occurrence of diseases immunologically indistinguishable from Newcastle disease. When geographical distribution is considered, particularly in the Netherlands East Indian islands immediately adjacent to British Malaya, it would be surprising to find that the fowl population of the latter had escaped infection

The peracute form of the Malayan virus disease, in the absence of diphtheritic lesions, resembles Newcastle disease closely.

Pathogenicity

The disease is readily transmissible to fowls of all ages and breeds. Attempts to infect ducks and turkeys by natural exposure in the field and by inoculation of infective material have been unsuccessful. Goslings artificially infected contracted the disease in a fatal form and the virus from a gosling was passaged to a fowl. Geese observed in close contact with infected fowls in the field did not contract the disease, naturally acquired cases never having been recorded in this species at any age. Guinea-fowls appear to be similarly resistant to natural infection in the field. Inoculation of massive doses of virulent material to guinea-fowl produces no reaction.

In experiments conducted in Perak in 1934, pigeons were found to be resistant to inoculation with infective liver-spleen emulsions which were highly virulent for control fowls. In a later experiment with a Johore strain of virus a proportion of the pigeons inoculated reacted and died, and from some of these cases successful serial passage has been maintained through pigeons. Passage through series alternating from pigeon to fowl has also been carried out. No outbreak of the disease has ever been observed in the field in which mortality occurred among pigeons though the latter may have been in close contact with diseased fowls. In artificially infected pigeons yellowish-white or greenish-white diarrhoea, paralysis of legs and/or wings, and twitching of one or both wings, have been observed.

Attempts to transmit the disease to Malayan sparrows (*Passer Montanus Malaccensis*), a Malayan quail (*Turnix Javanica Atrigularis*), and water fowls (*Amaurornis Phoenicura Chinensis*) gave inconclusive results. Malayan doves (*Streptopelia Chinensis Tigrina*) showed thermal reaction to inoculation of virulent virus, without fatal results. The results of experiments with a few species of wild birds, therefore, have been inconclusive.

Symptomatology and Course

Peracute to subacute forms of the disease occur, but a chronic form has never been encountered. In the peracute form, apart from hurried respiration and depression which rapidly deepen to coma, no other symptoms may be apparent. Death in such cases occurs within 24 to 36 hours of the onset of the disease.

The following account of symptomatology therefore is concerned with acute and subacute forms of infection and their sequelae. The onset of the disease is associated with symptoms indicative of general depression: feathers ruffled, wings relaxed and drooping, eyes frequently closed, the bird assumes a crouching posture, resting on its metatarsals. In the early stages of the disease the bird, if disturbed, may appear quite bright momentarily. Cyanosis of the comb and wattles is not a constant symptom though it occurs in the majority of infected cases. This change is commonly confined to the free border of the comb and is not generalized.

From the third to the sixth day after the onset of symptoms the characteristic localized necrotic lesions make their appearance on the buccal and pharyngeal mucosa as small circular yellowish elevations which tend to enlarge and to coalesce, forming irregularly disposed necrotic patches which resemble diphtheritic pseudomembranes. In many cases these lesions do not progress beyond the discrete strictly localized phase. The incidence of the advanced type of diphtheritic lesion varies considerably in different outbreaks, occurring with greater frequency in outbreaks investigated in Perak than those investigated in Johore. Rare cases were encountered, however, in which no definite lesions were detectable. Experimental transmission of infection from such cases evoked typical reactions in susceptible fowls with the occurrence of discrete or generalized lesions on the buccal and pharyngeal mucosa. In two outbreaks investigated in Johore in all cases there was a total absence of the buccal and pharyngeal lesions which had been previously accepted as diagnostic of the disease. In several cases received for *post-mortem* examination from various outbreaks in Johore complete absence of diphtheritic lesions was observed. Susceptible fowls subinoculated with infective material from these outbreaks contracted fatal infections. Buccal and pharyngeal lesions did not occur in these experimental cases. Cross-immunity tests were conducted at the same time from the result of which it was concluded that the virus was immunologically identical to three other "strains" of local origin. The latter "strains" were obtained from outbreaks in which the incidence of lesions on the buccal and pharyngeal mucosa was high. The incidence of these lesions in experimentally infected fowls in Johore was very low.

Severe respiratory symptoms as evidenced by hurried respirations are characteristic of the disease, dyspnoea usually becoming apparent on the third to the seventh day after the onset of symptoms. Later, as the disease progresses respiratory distress becomes more marked. The typical dyspnoea is associated with oral respiration, the beak being half opened and the head slightly raised at each gasping inspiration. Expiratory movements are accompanied by a characteristic gurgling sound in the pharyngeal region due to partial occlusion of the respiratory passages by fluid. These movements may be continued rhythmically for prolonged periods, punctuated occasionally by a variety of seizure when the neck is fully extended and the beak widely opened in an attempt to overcome respiratory interference. An audible gurgling sound occurs at this juncture. In many cases in which depression has deepened into coma the typical gasping inspiratory movements do not occur or occur only for short periods. The typical pharyngeal sound, however, is clearly audible. In recovering fowls which have survived the crisis of the infection this respiratory sound may persist for several days after all other symptoms have ceased to be evident. With the onset of severe respiratory symptoms the buccal and pharyngeal cavities become filled with foetid fluid admixed with tenacious decomposing matter which tends to adhere to the mucous membrane. The presence of this fluid, which may drip from the beak, particularly if the head is depressed, gives rise to frequent spasmodic swallowing movements sometimes accompanied by rapid opening and closing of the beak. A subdued cough is of frequent occurrence and is characteristically followed by shaking of the head and the expulsion of small quantities of fluid from the mouth. The voice of the affected birds becomes subdued to a sort of sibilant undertone. These respiratory symptoms in one form or another may be regarded as essential characteristics of the syndrome occurring in all except peracute cases.

Before the onset of coma many birds exhibit symptoms of lameness which is usually unilateral, the bird limping markedly on one leg which appears to be stiffened or partially paralysed. In severe cases several halting paces may be taken, the bird falling over sideways and after a brief struggle regaining its feet. In the later stages where a unilateral lameness has existed the bird is unable to rise and lies on its side, as a rule with the limbs flexed. Unilateral lameness may persist in birds which have survived an attack of the disease.

The head and neck are frequently turned laterally towards the wing when the final comatose phase of the syndrome is reached, or the neck may be dorso-ventrally flexed with the head dependent and the beak resting unsteadily on the ground. These postures of the head and neck appear to be assumed as a result of extreme weakness and should be differentiated from postures which appear to be caused by nervous complications not uncommonly seen in recovered birds. In the latter cases severe torticollis may occur resulting in the most grotesque and unnatural carriage of the head and neck.

During the course of the disease there is a profuse diarrhoea, the excreta being greenish-white or yellowish-white in colour and of a most offensive odour. The feathers about the cloacal opening are soiled and matted with inspissated faecal matter. The diarrhoea is seen on the second or third day of the disease.

The temperature may be elevated to 111° F. during the course of the disease. The average maximum temperature reached is 110° F. In artificially infected birds the first definite febrile elevation of temperature is generally apparent at the 60th hour after inoculation. This period is subject to variation from 24 to 96 hours in typical reactions. The peak temperature is generally reached about 84 hours after inoculation, the period varying from 48 hours to 120 hours. In acute cases death may occur immediately after the peak temperature has been reached, but in the majority of cases there is rapid fall in temperature from the peak to a normal or sub-normal temperature, death occurring in from 12 hours to 96 hours after the peak temperature has been attained.

Rapid wasting occurs, the decrease in body weight being very marked during the short acute course of the disease.

The incubation period of the disease in artificially infected fowls varies from two to four days. With attenuated strains of virus it may, however, be prolonged to eleven days. There is evidence that in natural infections the incubation period is of similar duration. Death usually occurs on the fourth to the seventh day after inoculation. Acute cases may terminate fatally on the third day and more chronic cases may even be prolonged to the 14th day. The latter cases, however, are unusual.

The mortality in affected flocks very frequently reaches 100 per cent. In a typical epiornithic the incidence of mortality reaches its peak about seven days after the appearance of the first cases and within a fortnight from the commencement of the outbreak all the fowls exposed to the infection are dead. During the course

of field observations and experiments a small percentage of fowls are found to be solidly immune to infection both by contact and by artificial inoculation of large doses of virus. Such immunity has been confined, as far as these observations are concerned, to adult birds, and it may be an active immunity resulting from previous infection and recovery from the disease. This point, however, has not been elucidated.

Post-Mortem Findings

The pathological changes typically associated with the disease are necrotic or diphtheritic buccal and pharyngeal lesions sometimes extending to the larynx and very rarely to the anterior portion of the oesophagus; localized haemorrhagic infiltration and the formation of petechiae on the proventricular mucosa; enteritis of variable intensity generally most severe in the duodenum, the large intestines and in the caeca where bran-like diphtheritic lesions and ulceration are not uncommon; congestion of liver, spleen and kidneys; slight tumor splenis may or may not be evident. It is rather remarkable in a disease the cardinal symptom of which is acute dyspnoea that there should be no detectable lesions affecting the lungs. The mucous membrane of the trachea may be somewhat inflamed, but inflammation is an inconsistent lesion.

The buccal and pharyngeal lesions, which have been described in some detail, rarely extend beyond the pharynx where they usually occur in greatest profusion. In severe cases partial occlusion of the laryngeal opening by diphtheritic false membranes occurs. The fluid which is present in the bucco-pharyngeal cavity and nasal passages is admixed with the regurgitated liquid contents of the crop which generally contains quantities of ingesta.

Petechiation and haemorrhagic infiltration of the proventricular mucosa are constant lesions except in peracute cases. A catarrhal condition and localized areas of what appear to be superficial erosion are frequently seen. (The punctuate haemorrhagic areas caused by infestation with Tetrameres species should not be confused with the lesions of the virus disease.) Petechiae may occur on the subcuticular layer of the gizzard.

An acute inflammatory condition may extend throughout the length of the bowel, the mucous membrane of which is a dark purple red colour. More commonly the intensity of the enteritis varies in different portions of the bowel with a tendency to be most severe in the duodenum and particularly in the large intestines and caeca. In the latter positions small bran-like diphtheritic lesions and more extensive ulcerations occur. The discrete bran-like lesions may be similar to those seen in the mouth. The ulcerations involve marked localized thickening of the bowel wall and give rise in the unopened viscus to a series of oval bead-like expansions of 0·5 to 1·0 cm. in length. The ulcers are raised, particularly peripherally. The surface may be flat or they may tend to be depressed centrally. They are typically covered by a loosely adherent fragmentary diphtheritic membrane, yellow or grey in colour. The large intestine and cloaca contain greenish-white or yellowish-white semi-fluid faecal matter. A catarrhal condition of the entire bowel is not uncommon.

Occasionally sub-sternal petechiae and/or a sero-gelatinous infiltration of the supra-sternal serous membrane may occur.

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Some Clinical Signs of Brain Lesions

DISCUSSION BY THE CENTRAL VETERINARY SOCIETY*

Mr. T. L. Wright: The following cases have been observed during the past 25 years and although they mainly concern the horse, they will undoubtedly also be of interest to the small-animal practitioner and the pathologist.

Case No. 1.—A chestnut gelding, purchased when six years of age, apparently sound and a good worker. At seven years of age it started kicking and became increasingly resentful of being harnessed to the vehicle in which it worked. In the course of a few months it became such a dangerous and protracted undertaking to get it "put-to" that it was left harnessed to the vehicle and fed from a nosebag at mid-day, while the other horses of the stud were stabled and fed. It continued to work normally, but observation disclosed that it exhibited peculiar behaviour in the stall, standing for long periods with its head under the manger, or pressed against the wall. Destruction was advised, for reasons of safety, but there was some delay because the animal belonged to a Corporation which had to wait for a meeting of the Highways Committee. Instructions were given that the horse should meantime be put in a loose-box and not worked. After about a fortnight it suddenly became very violent and charged madly round the box. It was destroyed in emergency, without damaging the brain. The latter was removed and a psammoma about the size of a small domestic hen's egg was found to be present.

Case No. 2.—A bay gelding, harness horse, aged about twelve years. This animal suddenly changed from a normal temperament and showed symptoms of ill-temper, kicking and biting—followed by a progressive inco-ordination of movement, and peculiar behaviour in the stable, similar to case No. 1.

It was destroyed, without damaging the brain, and again a psammoma was found.

Case No. 3.—A chestnut polo pony mare, five years of age, imported from Argentina in the early part of the year. In the latter part of April it suddenly exhibited epileptiform convulsions and amaurosis, maintained a temperature of 105° F. for three days, lay on the ground and was unable to rise. Experience gained from cases 1 and 2 led to the hasty diagnosis of "probable psammoma." The mare was destroyed without damaging the brain. Examination did not disclose psammoma or any other adventitious growth. The brain was sent to the late Sir John M'Fadyean, who reported that it was a case of acute encephalitis, from which the animal could not have recovered.

In the light of reports from the U.S.A. in recent years, on equine contagious encephalo-myelitis, and my own observations of that disease in Argentina in 1941, I often wonder if this may have been the cause of encephalitis in this imported Argentine mare.

Having mentioned this disease, I should like to remark at this point, that, although I saw a widespread outbreak of it among horses, I have not seen a mule affected by it, and none of the people with whom I was in contact in South America had seen it in these animals, although it was believed mules there were liable to it. At a time when this disease was very prevalent among the local horses, we had under our care nearly 2,000 mules, and inspected many others. A few of them showed decidedly suspicious signs of contagious encephalitis, but when in a strange country it is generally advisable to be guided, to some extent, by local knowledge, and I was assured by laymen of considerable experience that these mules were suffering from the effects of eating a poisonous fungus, and that they would recover if put on to a different pasture. This procedure proved effective in all but one case, which was still showing considerable inco-ordination of movement when I left the country, and I do not know the result. We had to consider the advisability of protective inoculation, but in view of the observations which I have just mentioned and because the available vaccine was all urgently wanted for horses, labour was scarce and expense had to be given some consideration, it was decided to take no action. Whether this was altogether wise I am not prepared to state, but subsequent results were certainly uneventful.

Case No. 4.—A bay gelding carriage horse, aged about twelve years. One morning the coachman thought the horse was dull and listless and attempted to give it a drench. When its head was raised it staggered and pressed against the wall with convulsive movements, described by the coachman as a "fit." I saw the horse about half an hour later. It was dull, disinclined to move without strong urging, and affected with amaurosis. There was cataract in each eye, but not enough to cause complete blindness. Enquiry showed that for several months this horse had been in the habit of walking in a circle in its loose box at night, twisting the straw bedding into

*At the Annual General Meeting held at the Conway Hall, London, W.C.1, October 4th, 1945.

a cone in the middle of the box by morning. It was destroyed without damaging the brain, which was found to contain a psammoma in each lateral ventricle. Each completely filled a ventricle. They were sent to the Royal Veterinary College Museum.

Case No. 5.—A Cleveland Bay harness gelding, 15 years of age. An urgent call was received to what was described as "a horse with colic and peculiar behaviour and sweating profusely."

Enquiry showed that it had eaten the evening feed normally and at 7 p.m. appeared to be normal. At 7.45 p.m. it was seen to be standing with the muzzle resting on the bottom of the manger, with the near elbow dropped, and it was sweating profusely all over. When I arrived it was standing with a fixed expression of the eyes with the off elbow dropped, suggesting radial paralysis. It was standing away from the manger, in the middle of the box; it was sweating, and the pupils were dilated with complete amaurosis. On being handled, although spoken to, there was sudden tension of the muscles of the back and loins and flexors of the neck; the hind legs were spasmodically thrust forward close to the heels of the fore limbs and the animal nearly fell. The whole movement was similar to that of a horse with tetanus, when suddenly touched. It may have been deaf, but unfortunately no test of hearing was applied. Enquiries revealed that it had stood in a stall for years, but in recent months had become spiteful and inclined to kick at anybody passing, and was not "doing" well. Put in a quiet loose-box, it had become more placid and improved in condition.

Three weeks before my visit it had fallen, without apparent reason, on a good level road while at exercise in harness; it lay still for a few minutes, then rose and went on apparently normally, but is reported to have had a temperature of 101° to 102° F. for a week. It was not seen by me at that time and was put back to regular exercise or light work. Warning was given that a brain tumour was suspected and that it was probable that the horse would have to be destroyed, but further close observation would be necessary.

During the next hour the condition of the animal became worse; it fell and was unable to rise, muscular spasms became weaker, coma followed, and about two and a half hours after the onset of acute symptoms, the horse was destroyed by means of a humane killer. This damaged the brain to some extent, though not greatly, and when it was removed it was comparatively easy to find a tumour about the size of a dried haricot bean, attached by a long slender pedicle to the floor of a ventricle. The brain was taken to Dr. Tom Hare, who very kindly undertook to carry out a pathological investigation. He found two other small tumours and reported that each of the three was a psammoma.

Case No. 6.—"*Ear Fistula.*"—A six-year-old polo pony mare, purchased in Ireland a few months before I was consulted about her, was said to have become irritable in temperament after arrival here and was not schooling well. My attention was directed to a small sinus at the base of the near ear, which was alleged to be the result of an injury sustained in transit. Exuding from it was an evil-smelling, slimy liquid. It was obviously a dentigerous cyst, or so-called "ear fistula." The mare was cast and chloroformed on two occasions with an interval of 14 days. On the first occasion an object resembling a small equine cheek tooth in a state of caries was removed, followed by a larger irregular mass which had the appearance of three malformed cheek teeth fused together. The removal of the latter required considerable force.

On the second occasion, a large, fairly smooth mass was removed, which slightly resembled a cheek tooth in structure. Removal of these masses left a large gaping cavity, which eventually completely healed. In the course of three months the mare acquired an equable disposition and became a first-class polo pony.

Case No. 7.—*Fractured Skull.*—A chestnut polo pony gelding, nine years of age, received a severe blow on the head while at full gallop. It fell instantly and lay on its side. Although unconscious, its legs continued to move with a galloping action for several minutes and it bled copiously from the nostrils. On examination it was found that both cranial bones were fractured, the right side being markedly depressed. While still unconscious, the patient was partly dragged and partly lifted into a motor horse-box and taken to a stable about a mile away, by which time it was on its feet, with a very unsteady gait. If left untied in a loose-box, it walked incessantly in a circle. Secured to the manger on a short rack-chain, it remained still and made no effort to break loose. It was kept tied up in a quiet box, fed on bran mashes, steamed hay and green food, and given pot. iodide in drinking water night and morning. No attempt was made to elevate the depressed fracture. That was deferred as a probable requirement, but early signs of steady improvement made it unnecessary. Inhalations of tinct. benzoin co. in steam were given three times daily. The pony recovered. The following season it was played regularly and sold at auction for a fair price.

Case No. 8.—I can make only brief comment on this. In the early days of the recent war, a polo pony being broken to harness, attached to a heavy log, reared and fell backwards and struck its occiput on the log, sustaining concussion of the brain. The pony became very violent, with convulsive movements, and could not be restrained in the stable. The animal was destroyed but no *post-mortem* examination was made.

Dogs

By the courtesy of Imperial Chemical Industries, Ltd., Mr. Ogilvie exhibited to the recent Annual General Meeting of the Society of Veterinary Practitioners, an early Russian film showing cerebrectomy on the dog, and its results. I found it of particular interest, and regard it as a great stimulus to the much needed investigation of morbid conditions of the brain of small animals.

In general practice we often see cases in which a dog, or sometimes a cat, walks in a small circle, or with the head turned to one side or semi-rotated on the long axis of the neck. We presume that this is due to cerebral pressure, and many of such cases yield to treatment.

Amaurosis associated with distemper may arise from affection of the central nervous system, and in my experience many cases recover if treatment be adopted in time—before degeneration of the optic nerve occurs.

I have never seen a tumour of the brain of a dog confirmed on *post-mortem* examination.

In conclusion, I would stress that important signs of cerebral disturbance in the horse, though not specific, are:—

1. Newly acquired irritability of temperament—kicking, laying back the ears and shaking the head.

2. Suddenly falling, without such apparent cause as stumbling or slipping.

3. Amaurosis. In this connection, the four cases described, in which brain tumours were found *post mortem*, were all in harness horses habitually working in blinkers. The suspect in which no tumour was found was a polo pony, and had never worn blinkers. In the old days of carriage horses there were apparently many cases of so-called "megrims," "blind staggers" and "stomach staggers." It is more than likely that some of these conditions were due to tumour-like formation in the brain. Is it probable that the wearing of blinkers, restricting the amount of stimulus from light and limiting the range of vision, may play some part in encouraging the deposit of cholesterin crystals within the ventricles of the brain and in the optic chiasma?

Dr. J. McCunn: I have listened with pleasure to Mr. Wright's remarks on cerebral troubles in the horse—and would thank him on behalf of the older hands who became veterinary surgeons primarily because of the horse.

I can claim to have an experience which is almost as long as Mr. Wright's and, like him, I have seen a fair number of these cases. It is not a difficult matter to come to the conclusion that an animal has brain trouble. It is an entirely different thing, in such an animal as the horse, to diagnose either the seat or the nature of the lesion. Generally speaking, they may be classified into two groups: those which are characterized by excitement or irritability and those which are characterized by simple change in conduct, dullness, stupidity and alteration in gait. The former type are usually associated with meningeal troubles and the latter with the deeper structure.

I have seen these brain troubles change in type. When I first came to London the principal one was a condition called "megrims" with an occasional "psammoma." When one found a tumour in the ventricle it put a satisfactory end to a case but as I have known of psammomas being found in horses dead from other causes, and also in those which had been in apparent health before being killed, I have had some doubt as to the correctness of some previous diagnoses.

The megrims now seem to be a thing of the past and psammomas are less frequently encountered. In their place there is one trouble which has caused me considerable concern, namely, "head shaking." The affected horses developed this when warmed up. I have encountered it in draught and riding horses. Such animals usually bore to one side of the road and in many instances they are unsafe to use on the streets. They perform as if they have a persistent fly in their ear. In some cases if the ears are thoroughly cleaned the symptoms will abate, and in others a felt pad under the poll-strap seems to help. In three cases good results followed a course of iodide of mercury and arsenic. It would be interesting to know the nature or origin of this condition. In my experience the condition is often serious enough to render the animal useless for work.

Another modern condition is one which I associate with a calcium deficiency. I have no biochemical proof that this is so but the administration of calcium, preferably intravenously, in the first instance seems to control the symptoms. Affected horses appear more nervous than usual; they have locomotor trouble, especially with the extensor muscles. They stumble easily, especially when going down hill, and they appear to have slight visual defects. They eat quite well, are normal in their natural functions and have no elevation of temperature, but the pulse may be accelerated. There is one reflex action on which I greatly rely in such cases and that is the orbital one. If one taps an animal over the zygomatic region the reaction is usually a blink of the eye. In the cases to which I allude this blink is followed immediately by a series of small blinks or tremors. This is a reflex which is almost pathognomonic. Incident-

ally, a similar reaction will usually be experienced in a cow suffering from milk-fever, even in the early stages of the disease, and also in the dog. In the dog there is a definite condition which yields to calcium and I have seen many cases, but as was the case in the horse I have no biochemical data to support my supposition that it is a calcium deficiency. I hope to make further investigation into this matter in the near future.

In my opinion "shivering" is a condition which should be classed amongst the deficiency diseases. It has long been known by certain horse dealers that rest, good food and cod liver oil will settle many shiverers. It is a well-known fact that *vice versa*, anything which interferes with adequate nutrition or any febrile upset such as strangles or stable fever in young horses will lead to an accentuation of the symptoms. Likewise, a long train journey has the same effect. I cannot support those who believe that the bony deposits in the lumbar region have any marked influence or effect on this condition, for most town horses which reach any reasonable age show these and still show no evidence of "shivering." In conclusion I would ask the meeting whether in their opinion animals suffer from headache. If they do, and I can see no reason why they should not, how does one diagnose such a condition?

General Discussion

There was considerable discussion on the subject.

Mr. S. F. J. Hodgman spoke of a polo pony he owned in India which developed brain symptoms with excitement. He asked for details of the method of destruction used by Mr. Wright in which care was taken to avoid damaging the brain.

Mr. W. A. Pool referred to the equine encephalomyelitis that had caused serious losses in the United States and Canada, in South America, Russia, India and elsewhere, and to the types of virus that were responsible. He also spoke of the infection in human beings with the virus of equine encephalomyelitis and its isolation from wild birds in certain affected areas.

Dr. T. Hare explained that he had not yet completed his examination of the material from the case referred to by Mr. Wright.

Dr. J. T. Edwards referred to encephalomyelitis in horses in India and the work done there by Shirlaw which indicated that "kumri" is a sequel to this infection.

The Reply

Mr. T. L. Wright said that he felt gratified by the discussion which his comments had aroused and he hoped that the younger members of the profession would thereby be stimulated to increased interest in the brain of the small animals.

Dr. Edwards had mentioned instances of army horses in India affected with paraplegia. He (Mr. Wright) had seen a few similar cases in army horses in Mesopotamia in 1917, and the condition was then spoken of as contagious spinal meningitis. He agreed with Dr. Edwards that there is great need of the further study of the neurology of the domesticated animals.

Dr. Hare's report on the pathology of case No. 5 would be awaited as a very valuable contribution to this discussion. His remarks on arterio-sclerosis and consequent changes in the meninges were of interest. The suggestion that coccidiosis may be associated with hysteria in the dog recalled to his mind a case in which a young dog which had repeated attacks of hysteria and "fits" not attributable to distemper had been reared on premises where an older dog died suddenly, apparently from coccidiosis.

Mr. Pool's reference to encephalo-myelitis reminded him that while he was in Argentina he understood that this disease in the horse was notifiable primarily on account of its communicability to human beings.

With regard to Professor McCunn's statement that there were many instances of psammomata having been found in the brain of horses which had shown no clinical disturbance, it must be borne in mind that clinical signs of disturbance would depend on pressure, and he would ask Professor McCunn the following question—which he did not expect him to be able to answer—*viz.*, *Re* those psammomata which had been found *post mortem* in horses which had shown no clinical signs, if the horses had been able to live a little longer, could it be said that those tumours would not eventually have caused some pressure disturbance with resultant clinical signs?

A few "head-shakers" had been observed, but there had been no opportunity to follow one to its end; they were generally sold. He agreed that there was no way of diagnosing headache with accuracy in an animal, but assumed that it did occur in such conditions as nephritis, etc.

Mr. Hodgman had asked about the method of destroying a horse without damaging the brain. The earlier cases mentioned were done by a knacker who was expert at inserting a knife in the occipito-atlantoid joint but, unfortunately, he was not available for case No. 5.

THE VETERINARY RECORD
March 16th, 1946

THE FARM BUILDINGS REPORT AND ANIMAL HEALTH

THE report of the Farm Buildings Committee, a review of which is published elsewhere in this issue, has proved a severe disappointment to the veterinary profession, particularly in matters regarding the relationship of housing to animal health and in the failure of the Committee to give a clear indication of the best kinds of farm buildings to encourage in the future. Certain evidence was submitted to the Committee by the N.V.M.A. in 1943 and the Association would have welcomed an opportunity to give further advice to the Committee in so far as the health and comfort of livestock are concerned.

At the outset of the report it is stated that "of the characteristics of buildings by which the comfort of animals is affected, little is known." It is not denied that there are certain problems regarding animal housing and health on which investigation and research should be undertaken, but we venture to suggest that data available on many of the matters specified in the report are by no means so inadequate as the Committee implies. In this connection we would especially direct attention to information on the relation of environment and health which has been recorded from time to time, some of which is summarized in the U.S. Year-Book of Agriculture, 1941. Over 25 years ago, Sir Leonard Hill demonstrated that the ill-effects and discomfort experienced by man, resulting from the excessive atmospheric humidity and lack of air-movement in badly ventilated buildings, were due to heat stagnation, and the same is assumed to be true for animals. The main adverse effect of confining animals in poorly ventilated buildings is that the body loses its adaptability to suddenly changing climatic conditions. The reaction to cooling becomes so slow and the adjustment mechanism becomes so inadequate that when the animals are exposed to a sudden lowering of atmospheric temperature, "chilling" with its increased susceptibility to disease is likely to follow. We make no excuse for the use of the term "chilling": by it we mean those profound disturbances of circulation, of blood pressure, and of the regulation of heat distribution throughout the organs, which lead to a definite or indefinite clinical syndrome and are followed by the onset of precise pathological changes. Many examples of this syndrome could be cited from practical experience by veterinarians and stock-owners, more particularly perhaps in association with the respiratory organs and the udder, while a well-documented description of the effects of bad ventilation in pig houses has been given by P. L. Shanks (*Vet. Rec.* **51**. 234).

On the more general question of the advantages or disadvantages of the prolonged confinement of animals in buildings there is, apart from the physiological aspects of animal comfort and health referred to above, a lack of evidence on how the design of buildings, *per se*, influences the dissemination of specific animal diseases. The details of methods of spread of bovine tuberculosis in cowsheds and yards typify the kind of data which should be obtained.

One outcome of special importance under the present conditions of shortage in building materials and labour may well be the finding that elaborate and expensive buildings, exemplified in the modern cowshed, are really unnecessary for the maintenance of animal health, even in parts of the country where weather conditions would seem to indicate

otherwise. The Committee realize this possibility. They observe (paragraph 71) that "the outstanding question in magnitude and urgency in this tendency to the open type of accommodation for stock is the greater use of yards covered with a shelter or completely open. Wide enquiry has convinced us that in this are important possibilities to which wholly inadequate attention is being given. They concern cattle, horses and pigs." The Committee seem, however, to have failed to appreciate that there is no new principle in the housing of these animals in yards; as veterinarians well know, many thousands of horses, milking cows and pigs have been successfully kept in yards for generations past both in England and in Scotland. The N.V.M.A. "Memorandum on Farm Buildings," submitted to the Committee, pointed out the advantages of keeping animals in open yards and stressed that animals allowed unrestricted access o fresh air and sunshine and with the opportunity for exercise, are freer from the commoner diseases which affect livestock.

Members of the veterinary profession, and doubtless others, may well be disappointed to find that an opportunity to correlate the slightly differing findings of various authorities has been missed or avoided. The report would have gained great weight and usefulness if official pronouncements upon the cubic capacities desirable per head, criteria for ensuring effective ventilation, amounts and distribution of lighting facilities, standards for doorway sizes, and many other matters upon which there is now no agreed consensus of opinion, had been clearly stated for the different species kept under different specific conditions.

Amongst the recommendations made by the Committee for the consideration of the Ministry of Agriculture is the setting up of an Advisory Service to carry out extensive enquiries and experiments in all matters relating to farm buildings. It is proposed that "at each Advisory Centre, one officer, possibly an architect not necessarily on a full-time engagement would be required, assisted by a small voluntary advisory panel drawn from the interests concerned, namely, architects, builders, landowners, agents and farmers."

We have noted already the Committee's failure to make itself fully cognizant of the wealth of knowledge and experience already available, and feel bound to make strong protest on the omission from the suggested advisory panel of any mention of veterinary representation. Such omission is the more surprising in view of the emphasis laid by the Committee throughout the report on the intimate relations of housing and animal health.

The twelfth report on the work of the Northern Counties Animal Disease Research (Duke of Northumberland Memorial) Fund is now issued. Relating to sheep and lamb diseases, this 1946 report is compiled by Mr. W. Lyle Stewart, M.R.C.V.S., and is obtainable from the Duke's Fund at King's College, Newcastle-upon-Tyne.

We are also in receipt of Dr. Arthur Walton's "Notes on the Technique of Artificial Insemination" (1946 edition), published by the Holborn Surgical Instrument Co., Ltd., and also containing advertisements of outfits for artificial insemination supplied by the firm. Copies, price 1s. net, are available in English or French on application to the Company at 26, Ely Place, London, E.C.1.

* * * * *

"The Mineral Factor in Animal Feeding."—A paper under the above title was read by Mr. F. E. Corrie, B.SC. (AGRIC.), at a discussion meeting of the Eastern Compounders' Section of the National Association of Corn and Agricultural Merchants on February 21st. The Association is to publish the paper, which was illustrated by charts and tables, in the form of a brochure, and copies will be available to members of the N.V.M.A. upon application to The Iodine Educational Bureau, Stone House, Bishopsgate, E.C.2.

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WEEKLY WISDOM

"Having had dealings with inventors and people on research work, I had found they behaved peculiarly."—Mr. J. K. PHELPS.

REPORT

Farm Buildings

[POST-WAR BUILDING STUDIES, No. 17. Published for the Ministry of Agriculture and Fisheries, by H.M. Stationery Office, London, 1945. Pp. 208. Price 3s. net.]

In November, 1942, the then Minister of Agriculture appointed a Committee "to consider and make recommendations regarding the layout, design and construction of farm buildings after the war." The Committee functioned under the Chairmanship of the late Mr. Tristram Hayward until 1944, and subsequently under Sir F. L. Engledow; it included one veterinary member (Mr. A. Douglas). The report now submitted embodies the conclusions and recommendations of the Committee, which has drawn "as fully as possible on the knowledge and experience of landowners and agents, of farmers and farm workers, and of agricultural scientists." (It will be recalled that the National Veterinary Medical Association submitted to the Committee a "Memorandum on Farm Buildings," since issued as N.V.M.A. Publication No. 7).

The report is divided into four parts. Part I first enumerates the problems to which the Committee primarily directed its attention. The basic principles in respect of farm buildings are then clearly set forth and discussed. These include, *inter alia*, appropriate cost (*i.e.*, the relationship between the cost of buildings and productive capacity of the farm), adaptability, ensurance of animal health, water supply and drainage, improvization of buildings, and comfort and economy of labour. The Committee lay emphasis on the need for so designing new farm buildings that they can be easily adapted for other than the purpose for which they were originally erected. "So far as possible buildings should be so designed that both structurally and in dimensions they are capable of accommodating the internal equipment required when adapted to an alternative purpose, as, for example, when a stable is converted into a cowhouse."

A chapter is devoted to a review of current knowledge of the design, methods of construction, and materials, and some of the larger changes in respect of these and by which farm buildings may be influenced in the next few years are indicated. The most important of these is probably the application of mass production prefabrication technique, and the Committee recommends that steps should be taken at once by the Ministry of Agriculture to discuss with manufacturers the mass production of standard framed buildings, for which dimensions are suggested. General notes are given on building materials for walls, roofs and floors and on water supply and fittings. This information is in no sense original, and may be found in more detail by those who require it, in text-books dealing with farm building construction (*e.g.*, Linton's "Veterinary Hygiene").

Chapter IV, dealing with accommodation for livestock, is a summary of the principles connected with the housing of animals. It is pointed out in this connection that a great alteration in outlook is beginning to set in amongst farmers regarding the importance of light and ventilation to the maintenance of animal health. This observation is, of course, not new to members of our profession, nor, indeed, to the more progressive animal keeper.

Part II deals in detail with the layout and design of farm buildings. According to the Committee, "the primary objects of good planning are: health and well-being of stock; economy in labour and management; economy in prime cost and cost of maintenance." The principles of good planning are stated as follows: "The first principle for the layout of the farmstead should be that buildings and yards accommodating livestock, stock food, and bedding, should be planned as a group; while other buildings, which will be mainly for storage, can, if desired, be planned and grouped separately. The fundamental requirement is, that there must be no confusion of traffic lines," and "the second principle of good layout might therefore be to provide a main access road well made and as direct in line as possible, from the highway through the farmstead and leading to the fields beyond." The application of these principles is illustrated by diagrams of three specimen layouts of farmsteads, which are described and discussed in the text.

A consideration of the types of buildings appropriate to various classes of livestock occupies approximately half of the whole report. This gives a description of the design, layout and constructional details of animal habitations. The excellent diagrams in this section, as well as those in other parts of the report, constitute perhaps the most valuable feature of the publication.

Accommodation for dairy cattle* is described and discussed in relation to the three main systems of herd management for milk production now practised in this country: *viz.*, the cowhouse system, in which the cows are housed and milked in the same building; the milking-house system, in which the cows are housed

* This chapter is a revised form of M. of A. Bull. No. 40, *The Construction of Cowhouses*, and is the work of a Sub-committee.

in covered, or partly covered, yards, or other available buildings, but are milked in batches in a special milking-house; and the open-air system where no housing is provided, the cows being in the fields and milked by machine in a movable bail. Each system, with its advantages and limitations, together with general recommendations and structural details for suitable buildings, is described. Attention is also given to the calf-rearing unit and to accommodation for bulls; a diagram illustrating a suitable arrangement for the housing and easy management of the latter would have been helpful.

Under accommodation for horses and for pigs, it is to be noted that the Committee endorses veterinary opinion that these animals, except fattening pigs, are best kept on the open-air system unless the severity of the climate makes housing a necessity.

The report contains adequate descriptions and plans for the construction of loose boxes, for general purposes and for isolation. The building of various types of permanent stockyards is also dealt with, as is the erection of temporary structures made, for example, with straw. A separate chapter devoted to "Straw Yards and Straw Buildings" should prove of great value to farmers at the present time. The Committee recommends that, in view of the shortage of building materials, now and for some time to come, "farmers should study and exploit the use of straw as a partial solution of the difficulties of the next few years."

Part III describes and discusses in separate chapters, (i) the exclusion and control of insects, rodents and other pests from farm buildings; (ii) fire prevention; and (iii) the uses and installation of electricity on the farm.

Part IV comprises a summary of the Committee's proposals for consideration by the Ministry of Agriculture. The most important of these, and indeed the most far-reaching in the report, is the recommendation for the setting up of an Advisory Service, the functions of which would be to undertake experimentation on farm buildings, and to collect and disseminate information relating to their function, design and construction. This Service would also be concerned with "materials and methods for fencing, water supply to fields and buildings, roads, drainage and other matters such as sheep-dippers, which are not strictly farm buildings." It is suggested that an appropriate organization would be a headquarters unit in the Ministry of Agriculture with an Advisory Service on a regional basis, which should be part of the Provincial Advisory Agricultural Service. At each Advisory Centre it is proposed that one officer, "possibly an architect not necessarily on a full-time engagement, would be required, assisted by a small voluntary advisory panel drawn from the interests concerned, namely architects, builders, landowners and agents, and farmers."

The Committee, in the various sections of the report concerned with animal habitations, makes frequent reference to its lack of information regarding the relationship of housing factors to animal health. Thus, almost at the outset of the report (para. 8) the Committee state, "we are obliged to record that in some important matters lack of knowledge is still a severe handicap to farm building design. This is especially the case where the comfort and health of livestock are concerned." The hope is expressed that the Agricultural Improvement Council and the Agricultural Research Council will undertake investigations on the housing factors which affect livestock. "The factors on which reliable evidence is specially necessary include: influence of air temperature and floor temperature on bodily comfort and health; control of humidity in pig and other stock houses and the effects of humidity on health; thermal insulation in farm buildings; the general problem of ventilation and, in particular, necessary air space allowances and the avoidance of draughts; influence of light on livestock." This is a formidable list, and whilst, in general, the Committee's statement as to deficiency of knowledge may be true, the reviewer suggests that the data available on many of the matters specified here and elsewhere in the report are not so entirely inadequate as the Committee would appear to imply. Significant information on the relation of environment and health can be found in scattered and diverse investigations reported in veterinary, medical and agricultural literature. Some of this is summarized in the U.S. Yearbook of Agriculture, 1941, "Climate and Man" (see chapters, "Climate and Livestock Production." "Comfort and Disease in Relation to Climate" and "Health in Tropical Climates").

Apart from their recommendations, the Committee put forward no very novel suggestions regarding the principles and design of farm buildings. The report may be fairly described as an extremely useful text-book recording current farm building practice in this country. For this reason, and for the informative diagrams and plans which it contains, the report merits careful study by all members of the veterinary profession. The profession must be well-informed of the most up-to-date principles affecting the design and construction of animal habitations, and of installations such as water supply and drainage. To the reviewer, it seems that there is some danger of the advice and experience of veterinarians being overlooked, even where animal health and physiological considerations are concerned in relation to housing principles and practice. It is to be hoped that this will not be the case in any investigations which may be undertaken for the advancement of fundamental knowledge of animal health and hygiene in relation to environment.

N. J. S.

QUESTIONS IN PARLIAMENT

Higher Education, Colonies (Inter-University Council)

Mr. Stanley asked the Secretary of State for the Colonies whether he is yet in a position to make a statement about the inter-university council for higher education in the Colonies, the establishment of which was recommended by the Commission on Higher Education in the Colonies.

Mr. Creech Jones: Yes, Sir. I have, in accordance with the Commission's recommendation, invited the universities of the United Kingdom, the University of Ceylon, the Hebrew University, Jerusalem, and the Royal University of Malta, to nominate representatives to serve on a body to be known as "The Inter-University Council for Higher Education in the Colonies." All these universities have accepted the invitation and their representatives, together with my educational adviser, will meet for the first time in London, on Friday, March 8th, 1946, when the Council will be formally set up. They will have power to co-opt additional members.

The members of the Council are:—

Aberdeen: Sir William Hamilton Fyfe, M.A., LL.D., F.R.S.C., Vice-Chancellor and Principal.
Belfast: Professor R. G. Baskett, M.SC., Professor of Agricultural Chemistry.
Birmingham: R. E. Priestley, Esq., M.C., M.A., D.SC., Vice-Chancellor and Principal.
Bristol: P. R. Morris, Esq., C.B.E., Vice-Chancellor.
Cambridge: J. A. Venn, Esq., LITT.D., F.S.A., President, Queen's College.
Ceylon: W. Ivor Jennings, Esq., M.A., LL.B., LITT.D., LL.D., Vice-Chancellor.
Durham: J. F. Duff, Esq., M.A., M.ED., LL.D., Vice-Chancellor.
Edinburgh: Professor John Macmurray, M.C., M.A., Professor of Moral Philosophy.
Glasgow: Professor Noah Morris, D.SC., M.D., Regius Professor of Materia Medica and Therapeutics.
Jerusalem (Hebrew University): Professor Norman Bentwich, M.A., Professor of the International Law of Peace.
Leeds: B. Mouat Jones, Esq., D.S.O., M.A., Vice-Chancellor.
Liverpool: Professor J. G. Wright, M.V.SC., F.R.C.V.S., Professor of Veterinary Surgery.
London: Sir Alexander M. Carr Saunders, M.A., LL.D., Director, London School of Economics and Political Science.
Malta: Professor Robert V. Galea, O.B.E., A. and C.E., Rector.
Manchester: Professor W. J. Pugh, O.B.E., B.A., D.SC., F.G.S., Deputy Vice-Chancellor and Professor of Geology.
Oxford: W. T. S. Stallybrass, Esq., O.B.E., D.C.L., Pro-Vice-Chancellor, Principal of Brasenose College.
Reading: Professor R. H. Stoughton, D.SC., Professor of Horticulture.
St. Andrews: Sir James C. Irvine, SC.D., LL.D., D.C.L., F.R.S., Vice-Chancellor and Principal.
Sheffield: Professor L. E. S. Eastham, M.A., M.SC., Professor of Zoology.
Wales: Ifor L. Evans, Esq., M.A., Principal, University College of Wales, Aberystwyth.
C. W. M. Cox, Esq., C.M.G., M.A., Educational Adviser to the Secretary of State for the Colonies.
Secretary: Walter Adams, Esq., O.B.E., B.A.

In the "Constitution and Terms of Reference" which I have given to the Council, the Council's objects are stated to be (*a*) to strengthen co-operation between the universities of the United Kingdom and the existing universities in Colonial territories, (*b*) to foster the development of higher colleges in the Colonies and their advance to university status, and (*c*) to take such other action as will give effect to the principles recommended by the Commission as appropriate for the promotion of higher education, learning and research in the Colonies.

In addition to its general function of advising on academic policy, it is hoped that the Council will be ready to assist universities or colleges in Colonial territories in the recruitment of staff,

especially where it is desired to fill appointments by secondment from universities or colleges in this country.

The Council has not been asked to assume any responsibility for advising or placing individual men or women from the Colonies who wish to study in the United Kingdom, but I shall welcome any general assistance and guidance on policy which the Council can give bearing on the higher education of Colonial students outside their own territories.

An important function of the Council will be to arrange or to encourage visits between the home universities and the Colonial universities and colleges.

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Rabbit Trapping (Permit Conditions)

Sir T. Moore asked the Minister of Agriculture if he will now give an indication of when he intends to withdraw the facilities which were given during the war for the use of spring traps to catch rabbits in the country; and whether, in view of the unnecessary cruelty caused thereby and the availability of alternative means of destroying rabbits, he will take early action in the matter.

Colonel Crosthwaite-Eyre asked the Minister of Agriculture the nature of the orders issued by his Department modifying Section 5 of the Prevention of Damage by Rabbits and Hares Act, 1939; and whether, in view of the damage to dogs and other animals from spring traps, he will now revoke all such orders made.

Mr. T. Williams, *pursuant to his reply* [Official Report, February 4th, 1946; Vol. 418, c. 1376], *supplied the following Statement*:—

Instructions have now been issued in the following terms to County War Agricultural Executive Committees regarding the conditions which henceforth must be imposed on the issue of permits to set traps in the open:—

(1) In every case the Pests Officer is required to state in writing the grounds on which he recommends the issue of a permit.

(2) Each permit must be signed by the Pests Officer and countersigned by the Executive Officer.

(3) The permit is to be given only where the Committee are satisfied that open trapping is necessary in order to effect the destruction of rabbits.

(4) The Ordnance Survey numbers of the fields or woods or some other method of precise identification of the area covered must be stated on the permit, such area shall be the minimum necessary.

(5) Each permit shall be granted only for the minimum period of time required to complete the work on the area specified under (4) above.

(6) Neighbouring farmers and landowners shall be notified of the areas for which open trapping permits have been issued so that they may, if necessary, take precautions to prevent domestic animals or farm stock having access to the area in which open trapping operations are in progress.

(7) Any spring traps set out in the open must be visited at reasonable intervals of time and at least twice every day between sunrise and sunset.

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Meat Production Grants

Mr. P. Freeman asked the Minister of Agriculture the total amount of subsidy or grants provided by His Majesty's Government for the breeding and maintenance of cattle, sheep and pigs and for meat and the meat industry during each year since 1938.

Mr. Williams: The figures available are as follows:—

	1939	1940	1941	1942	1943	1944
	£	£	£	£	£	£
Improvement of livestock (see Note 1):						
Grants bulls	23,838	24,153	3 ,725	25,164	39,759	42,786
" rams	3,209	2,820	3,610	5,908	4,440	3,557
" boars	3,689	1,302	92	2,235	1,845	2,854
" milk recording	6,570	—	150	250	650	60,871
Bacon Industry:						
Payments by the Ministry of Agriculture in respect of pigs sold on long contracts and made into bacon (see Note 1)	193,272	—	—	—	—	—
Losses incurred by the Ministry of Food through the purchase and sale of bacon pigs and of the bacon produced therefrom (see Notes 2 and 3)	456,562	5,679,041	2,331,587	2,560,536	2,045,732	2,039,850
Cattle Fund (see Note 2):						
Payments to producers for live animals	3,839,163	443	7	12	—	7
Payments for carcases	102,907	12	—	—	—	—
Meat Industry (see Note 2):						
Losses incurred by Ministry of Food through the purchase and sale of cattle, calves and sheep, and of pigs not used for bacon production (see Note 3)	3,906,897	21,957,482	19,984,901	19,412,972	18,457,464	20,532,884
Hill Cattle Subsidy (see Note 2)	—	—	3,082	12,167	476,256	1,048,321
Hill Sheep Subsidy (see Note 2)	—	—	605,215	1,568,073	1,751,663	1,348,032

Note 1.—These figures refer to Great Britain.
Note 2.—These figures refer to the United Kingdom.
Note 3.—These figures exclude profits or losses made on imported bacon and meat, but include trading and other expenses of the Ministry of Food relating to the transactions of that Department in home produced livestock and meat, including bacon.

NOTES AND NEWS

Diary of Events

Mar. 16th.—N.V.M.A. Drafting Committee on Calf Husbandry and Calf Diseases, 10.30 a.m. (*Please note alteration from March 13th.*)
Mar. 16th.—Annual Meeting of the Biochemical Society, at King's College, Strand, W.C.2, 2.15 p.m.
Mar 21st.—N.V.M.A. Sub-committee on Conditions of Sale at Cattle Markets, 2 p.m. (*Please note alteration of date and time from last week's announcement.*)
Mar. 22nd.—Meeting of the North Wales Division, N.V.M.A., at Ruthin (Council Chamber), 2 p.m.
Mar. 27th.—Meeting of the Western Counties Division, N.V.M.A., at Exeter (University College), 2 p.m.
Mar. 29th and 30th.—Meeting of the Pathological Society of Great Britain and Ireland, at Sheffield University.
Apr. 1st.—R.C.V.S. Annual Fees due.
Apr. 4th.—Spring Quarterly Meeting of the Society of Dairy Technology (Welsh Section), at Llandrindod Wells (The Albert Hall), 11 a.m.
Apr. 10th.—R.C.V.S. Committee Meetings.
Apr. 11th.—R.C.V.S. Committee Meetings.
Apr. 12th.—R.C.V.S. Committee and Council Meetings.

N.V.M.A. Meetings at 36, Gordon Square:—

Apr. 15th.—Therapeutic Trials Committee at 11.30 a.m.
Finance and General Purposes Committee at 1.30 p.m.
Apr. 16th.—Sub-committee on First Aid Handbook at 10 a.m.
Organizing Committee at 12 noon.
Joint Veterinary Officers and Public Health and Parliamentary Committee at 2 p.m.
Appointments Committee at 4 p.m.

N.V.M.A. Meeting at the Connaught Rooms, Great Queen Street:—

Apr. 17th.—Council Meeting at 11 a.m.
Apr. 23rd.—Meeting of the Society of Chemical Industry (Agriculture Group), 2.30 p.m. (Venue to be announced later.)
May 3rd.—Meeting of the Welsh Branch, N.V.M.A., at Aberystwyth.
May 7th.—R.C.V.S. Animal Management Examinations, commencing in London.
May 7th.—R.C.V.S. Council Elections—Last date for Nominations.
May 21st.—R.C.V.S. Council Elections—Voting Papers issued.
May 28th.—R.C.V.S. Council Elections—Voting Papers to be returned.
June 4th.—R.C.V.S. Annual General Meeting.
June 4th.—R.C.V.S. Committee Meetings.
June 5th.—R.C.V.S. Committee Meetings.
June 6th.—R.C.V.S. Committee and Council Meetings.

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Inter-University Council for Higher Education in the Colonies

In our Parliamentary Columns we reproduce the announcement, made on Wednesday of last week in the House of Commons by the Secretary of State for the Colonies, of the establishment of an Inter-University Council for Higher Education in the Colonies. The appointment of Professor J. G. Wright, M.V.Sc.,

F.R.C.V.S., Professor of Veterinary Surgery, to represent the University of Liverpool on this important body will be welcomed by his colleagues in the profession, not only as a personal distinction but by reason of the evidence it affords that the University is keenly appreciative of the part played by veterinary science in our national life and in the development of our Colonies and in that of our Colonial universities.

The first meeting of the Inter-University Council was held at the Royal Society, Burlington House, on Friday of last week. In a message welcoming the delegates, Mr. G. H. Hall, M.P., Secretary of State for the Colonies, said that his Majesty's Government were pledged to quicken the social, economic and political progress of Colonial peoples and to guide them towards self-government. He accepted the view, expressed by the Asquith Commission, that the establishment of further universities in the Colonial territories would contribute greatly towards the achievement of this policy. In furtherance of this task the Government had allocated £4,500,000 for higher education in the Colonies during the next decade.

Sir James Irvine, F.R.S., Vice-Chancellor and Principal of St. Andrews University, was elected Chairman of the Council, and Sir Alexander Carr-Saunders, Director of the London School of Economics, was elected Vice-Chairman.

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R.C.V.S. OBITUARY

O'Callaghan, William, Main Street, Charleville, Co. Cork, Eire. Graduated Dublin, July 21st, 1921. Died February 20th, 1946.

Walker, Tom, Moss Lodge, Whitegate Drive, Marton, Blackpool, Lancs. Graduated N. Edinburgh, December 19th, 1902. Died February 25th, 1946; aged 70 years.

Mr. Tom Walker, M.R.C.V.S.

Mr. Tom Walker, whose death we record above with much regret, was one of the Fylde's best known veterinary surgeons He had been in failing health for some time.

After qualifying, Mr. Walker entered into partnership with Mr. G. Hutchinson, of Poulton-le-Fylde. For many years he was veterinary surgeon and inspector for Blackpool Corporation, a position he held until his partial retirement a few years ago.

He was esteemed for his practical interest in agriculture, and had been associated with the Marton show, and the old shows at Raikes Hall, at New Road (now Talbot Road) and at Poulton.

Mr. Walker's wife died last October. He leaves a daughter, a son, and two sisters, to whom deep sympathy is extended in their bereavement.

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GENERAL OBITUARY

Sir Richard Ashmole Cooper, Bart.

Sir Richard Ashmole Cooper, second baronet, formerly M.P. for Walsall, who died on March 5th at Berkhamsted, was the son of Sir Richard Powell Cooper, Bart., M.R.C.V.S., of Shenstone Court, Lichfield. The death of the latter in 1913 deprived this country of one of the keenest promoters of the interests of our pedigree livestock: he did much to make known overseas the qualities of British breeds for improving the native types. Sir Richard Powell Cooper practised his professon at Lichfield for a while and always took an interest in it: in fact, he, with Sir John M'Fadyean and others, was a member of a deputation which waited upon Mr. Runciman "with a view to obtaining a more liberal State grant for veterinary education and research." He was the nephew of Mr. William Cooper, M.R.C.V.S., who found the sheep scab remedy so extensively used under the name "Cooper's dip," and Sir Richard Ashmole Cooper, whose death we record with much regret, was the head of the firm, of which his father was a member, now known as Cooper, McDougal and Robertson.

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PERSONAL

We learn with pleasure of the pending arrival in London of Colonel H. B. Finney as a Veterinary Officer attached to Australia House and as the representative of the Commonwealth Department of Commerce and Agriculture. Formerly a resident of Brisbane, Colonel Finney was a member of the Queensland Division of the Australian Veterinary Association.

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Appointment.—Mr. John Trevor Stamp, B.Sc. (Edin.), M.R.C.V.S., has been appointed Veterinary Investigation Officer to the East of Scotland College of Agriculture, Edinburgh.

Mr. Stamp succeeds Mr. H. E. Harbour, who has joined the staff of the Cooper Technical Bureau.

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Death of Mrs. C. V. Doughty.—The many friends of Mr. and Mrs. W. A. Doughty, of Alnwick, will grieve to learn of Mrs. Doughty's death and will wish us, in their name, to extend deep sympathy to Mr. Doughty in his bereavement. On behalf of the ladies of the North of England, the following message has been addressed by Mrs. J. W. Rider, of Gateshead-on-Tyne, to the Secretary of the North of England Division, N.V.M.A.:—

"It is with very great regret that the ladies of the North of England have noted the passing of Mrs. C. V. Doughty, wife of Mr. W. A. Doughty, M.R.C.V.S., of Alnwick. Mrs. Doughty was a life member of the Victoria Veterinary Benevolent Fund and was always a loyal and generous helper in every activity in aid of the Benevolent Fund. Mrs. Doughty was a gracious, friendly lady and her passing is deeply regretted by us all."

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Editorship of "The Practitioner."—Sir Heneage Ogilvie has been appointed editor of *The Practitioner* in succession to Dr. Alan Moncrieff. Surgeon to Guy's Hospital and a vice-president of the Royal College of Surgeons, Sir Heneage was appointed K.B.E. in the New Year for his war services as a consulting surgeon to the Army. Dr. Moncrieff, who has been senior editor of *The Practitioner* since 1943, has resigned on his appointment to the new Nuffield chair of child health in the University of London. Dr. William A. R. Thomson, who joined *The Practitioner* in 1944, will continue as associate editor.

"The Field."—Mr. Brian Vesey-Fitzgerald, F.L.S., has resigned the editorship of *The Field* and has accepted a seat on the board of the Field Press, Limited. Mr. Vesey-FitzGerald, who contributed regularly to *The Field* for many years, before joining the editorial staff in 1935 as Naturalist Editor, succeeded by Mr. Eric Parker as Editor in January, 1938.

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Practising Nonagenarian.—We learn with interest from *The Nottingham Guardian* that Mr. Thomas James Marriott, M.R.C.V.S., of Car Colston, Newark, who has just entered his 91st year, is still regularly engaged in practice and, turning out in all weathers, drives his own car to his cases.

Mr. Marriott, who qualified at the Royal Veterinary College in 1876, was first at Bottesford, and then at Hawksworth, but in 1899 returned to Car Colston, his birthplace, to assist in and later continue his father's business. He was one of three brothers who became veterinary surgeons after acquiring their love of the healing art from their father. One practised for many years at Cotgrave; the other emigrated to Canada. Only Mr. Marriott survives.

Up by eight every morning, and seldom in bed until the last hour before midnight, Mr. Marriott finds time to dig his garden. He is the doyen of village Methodism in the district. Mrs. Marriott died three years ago, two years after their diamond wedding.

The honour of heading the list of *Chirurgorum Veterinariorum Collegii Regii Seniores* belongs to Mr. Samuel Laxton Hawes, of Oakham, Rutland, who qualified from the London College in 1873.

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Royal Society of Edinburgh Fellowships.—Among those recently elected ordinary fellows of the Royal Society of Edinburgh are Professor G. F. Boddie, Department of Medicine and Pharmacology, and Professor A. Robertson, Department of Hygiene, Dietetics and Animal Husbandry, Royal (Dick) Veterinary College, Edinburgh.

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PRIMARY PRODUCERS' CONFERENCE

Delegates from the United Nations will meet at Church House, Westminster, on May 21st, for a fortnight's conference of primary producers. Mr. Tom Williams (Minister of Agriculture) will address the delegates and will preside until a chairman is elected. Sir J. Boyd Orr, the well-known British nutritionist and now Director-General of the Food and Agriculture Organization at Washington, has been invited to address the assembly on the work of the organization and the relationship between nutrition and agriculture. It is hoped that, as a result of the conference, there will be established an International Federation of Agricultural Producers, functioning through a Provisional Council for two years and subsequently through a Permanent Council. The seat of the Federation will be chosen by the Provisional Council and English will be the working language.

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VETERINARY AND LIVESTOCK SECRETARIAT FOR THE SOUTH-WEST PACIFIC AREA

We are informed that a recommendation has been made that there should be set up in Sydney, New South Wales, a Veterinary and Livestock Secretariat under the auspices of U.N.R.R.A., to serve the South-West Pacific Area. This recommendation was made at a Conference recently convened at Sydney and attended by delegates from China, the Philippines, United States, India, Netherlands East Indies, Australia and New Zealand. The main function of the Secretariat would be to afford help in assuring the quality and health of livestock to be imported into devastated

countries such as Burma, Malaya, China and the Philippines from such supplying countries as Australia, New Zealand and the United States. The preliminary spade work for the Conference was done by a group of veterinarians from Australia and New Zealand. Dr. F. C. Minett travelled by air from Delhi as delegate of the Government of India.

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THE ESSENTIAL FREEDOMS OF MEDICINE

B.M.A. "Emergency Guarantee Fund"

The Council of the British Medical Association has decided that an Emergency Guarantee Fund shall be established to "further the cause of the medical profession in any major dispute which may occur between the Government and the medical profession in connection with the proposals for the national health service." The B.M.A., with a membership exceeding 50,000, has guaranteed £100,000. Every member of the profession is being urged to guarantee as much as he can—at least £25 is suggested.

The *British Medical Journal* states that the fund will be in two parts. Part "A" will be for the purpose of providing the general funds, from which the administrative, propaganda, and allied expenditure will be met. Part "B" will be used for the purposes of the "A" fund and also for the compensation of individual doctors who, because of their adherence to the cause of the profession, suffer exceptional financial hardship.

A leading article in the *British Medical Journal* states:—

"The cost of this campaign will be borne from existing resources, but should Parliament prove obdurate and refuse to modify proposals in the Bill which the profession might consider to strike at the essential freedoms of medicine, the doctors of this country might have to decide not to work in the new service. Such a decision would not be taken lightly, nor would such a decision mean that medical men would withhold their skill from patients in need of it. It would mean simply that the majority of doctors would continue to serve their patients outside and not inside the new service. If this happened, vastly greater resources would be needed and it is with this possibility in mind that the council has caused the new fund to be established."

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ARTIFICIAL INSEMINATION

Control of Transportation of Semen

With the increasing availability of air transport for civilian purposes the Minister of Agriculture and Fisheries has decided, in the interests of the British livestock industry, to control the importation and exportation of bull and stallion semen, and the purposes for which imported samples are used. The Minister has, therefore, made the Importation and Exportation of Semen and Imported Semen (England and Wales) Regulations, 1946. Applications to move bull or stallion semen between England and Wales and places outside of Great Britain should be made to the Secretary, Ministry of Agriculture and Fisheries (Livestock Improvement Branch), Block 4, Bickenhall Mansions, London, W.1. The Secretary of State for Scotland has made similar Regulations applicable for Scotland.

Much has yet to be learned of the effect on animal semen of long distance transport, including methods of packing and handling. It is proposed, therefore, to limit the issue of licences for the time being to samples to be despatched or received for approved research and experimental purposes.

Import licences, issued by the Board of Trade, will continue to be necessary but to facilitate arrangements by importers, and to save time, applications both for import licences and licences under the new Regulations should be sent direct to the Ministry of Agriculture and Fisheries who will deal with both in conjunction with the Board of Trade.

. . . . .

"It is greatly to the credit of the young British Society of Animal Production that it was able to convene such a useful conference on artificial insemination as gathered in London last week," observes the *Farmer and Stock-Breeder* in its issue of March 5th, and continues: "This new technique marks a revolutionary step in the control of livestock breeding; but as an instrument it is still very imperfect, and the implications of its use are as yet only dimly seen.

"From the day's discussions it was clear that methods and policies vary extremely throughout the world. In this country, more perhaps than in any other, the possibility was suggested that we may soon see a competition for the interest of farmers between the breed societies and the artificial insemination centres.

"Such an attitude is to be deprecated, for neither alone is likely to make much further progress. What is needed is that they should work together, and that both should have in view some constructive breeding policy towards the development of which their individual practical activities will provide the foundations."

ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Swine Fever:

Derbyshire—Spancarr Farm, Ashover, Chesterfield, Derbyshire (Mar. 11th).

Lincs. (*Lindsey*).—The Mill, Market Rasen, Lincs. (Mar. 6th).

Lincs. (*Holland*).—12, Thorney Road, Crowland, Peterborough, Northants (Mar. 11th).

London.—Springfield Mental Hospital, Aboyne Road, London, S.W.17.

Norfolk.—Orchard in Westgate Road, Gt. Walsingham, Norfolk (Mar. 3rd).

Surrey.—Drift Bridge Farm, Reigate Road, Ewell, Epsom, Surrey (Mar. 6th); Lynes Farm, Wonersh, Guildford, Surrey (Mar. 11th).

Yorks., E.R.—Corner House, Lowthorpe, Driffield, Yorks. (Mar. 6th).

Yorks, W.R.—Near Broad Oak Farm, Gunthwaite, Barnsley, Yorks. (Mar. 7th); Harlow Carr Gardens, Cragg Lane, Harrogate, Yorks., and 278, South Road, Sheffield, Yorks. (Mar. 11th).

Sheep Scab:

Cumberland.—Kelsick Farm, Wythop, Cockermouth, Cumberland (Mar. 4th); Dockray Nook, Lamplugh, Workington, Cumberland (Mar. 4th).

Westmorland.—Crosby Lodge Farm, Crosby Ravensworth, Penrith, Cumberland (Mar. 4th).

Yorks., W.R.—Waller House Farm, Wighill, Tadcaster, Yorkshire (Mar. 4th).

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PROVISION OF HEALTHY DAIRY HERDS

Devon County Scheme

Under the above headings the Agricultural Correspondent of *The Times* made the following informative contribution to the March 4th issue:—

Lord Huntingdon, Parliamentary Secretary to the Ministry of Agriculture, devoted much of his speech at Leicester to the health of our livestock and Government measures to improve the milk supply. As he said, these are matters of immense importance. The more so because there is reason to believe that the Government intend to press ahead with plans for the compulsory pasteurization of all milk, except supplies from attested or tuberculin tested herds.

If the Ministry of Health is pursuing this policy it becomes even more urgent than before that the Ministry of Agriculture should develop a national plan for animal health and give dairy farmers all possible help in cleaning up their herds.

There are already areas in Carmarthenshire and Ayrshire and round Reading where many of the dairy herds have attested or T.T. licences. With the consent of the majority of local farmers a start could be made to clean up these and similar areas completely. The farmer who has cows that react to the test would be paid compensation for loss incurred by their disposal but, as he would earn an extra 4d. a gallon for his milk from an attested herd as soon as he qualified, the rate of compensation need not be heavy.

Once clear areas, however small, have been established, the radius of each could gradually be expanded until whole counties have a clean bill of health as regards tuberculosis and contagious abortion. So far Ministers of Agriculture have excused the lack of a comprehensive policy, saying that there are too few veterinary surgeons and repeating the statement that 40 per cent. of cows would react to the tuberculin test and the country cannot afford to do away with so many cows. Evidence that now comes from Devon suggests that the proportion may be considerably lower.

Paying for Test

The Public Health Committee of the Devon County Council is encouraging farmers, whose buildings are satisfactory, to consider T.T. milk production. The county council pays the cost of the initial test carried out by the herd owner's veterinary surgeon if the number of those reacting to the test is too great to allow the farmer to proceed immediately with the establishment of a T.T. herd. There is no rigid rule, but if more than 15 per cent. of the cows in a herd react the council pays the fees. The county veterinary officer states that the incidence of tuberculosis is about 20 per cent. on the average.

The Devon County Council also runs a scheme to control mastitis, which may reduce milk yields by 10 to 60 per cent. Any farmer who suspects mastitis can have his cows clinically examined, free of charge, by one of the county veterinary officers, who will take

milk samples for bacteriological examination. The main object of the scheme is to detect infection of the udder before mastitis develops into a clinical case. All forms of mastitis do not yield to the same treatment. Sulphanilamide is effective in streptococcal mastitis, but not so in the case of the other common form. Information about the nature of any infection is sent to the owner and to his veterinary surgeon so that he can carry out the appropriate treatment.

This scheme, started in 1942, is giving encouraging results. Over 2,000 cows were examined last year on 146 farms. The farmers of Devon, particularly the younger men, are setting aside the old scepticism and suspicion of science. There is every reason to believe that if the Ministry of Agriculture would now adopt a clear policy in building up animal health, especially in dairy farming, where there is the greatest need for a helping hand, farmers generally would co-operate whole-heartedly in an enterprise which would pay them and yield the nation a good dividend in human health.

Need for a National Plan

In his succeeding article (on Monday last) the Agricultural Correspondent stressed the fact that in his recent speech at Durham, Sir Thomas Baxter, the Chairman of the Milk Marketing Board, endorsed the pleas made in *The Times* for a national plan to build up animal health, especially in dairy herds, and stated that, while it would be a vast project to bring the national dairy herd up to the T.T. category, the Board was anxious to enlist the full co-operation of the Government in a scheme to reach this standard within 20 years.

The article proceeds: "A significant move has also been made by the Royal Agricultural Society, which has decided that only animals that are certified to be clear of tuberculosis and contagious abortion shall be accepted for future Royal Shows. At last Wednesday's meeting of the R.A.S.E. Council, Lord Bledisloe, the President, offered a handsome cup for award to the English or Welsh county which makes most progress in clearing its herds.

"As the milk producers' organization and the premier agricultural society, as well as the veterinary profession, are so fully alive to the need for real progress in clearing disease from dairy herds, the Minister of Agriculture should now be emboldened to make a move in the knowledge that he can rely on the support of the leaders of the industry."

Sir Thomas Baxter gave some interesting facts about milk production in the war years. For the first three years the lack of concentrated feeding-stuffs, formerly imported, made itself felt and national yields fell by almost 15 per cent. But farmers gradually overcame their difficulties.

The next two years saw an improvement, and now production per cow is only 10 per cent. below the 1939 figure, and owing to the increase in numbers of cows last year's production was practically equal to 1939 production.

Figures for England and Wales issued by the Ministry of Agriculture show that on December 4th, when farmers made returns, there were 1,958,000 cows and heifers in milk, which is 5,000 more than a year previously. The numbers of younger cattle had fallen slightly, giving a total for all cattle and calves reduced by 21,000 in the year.

In spite of the check to the expansion of cattle numbers, which no doubt reflects the labour difficulties that handicap some farmers, Sir Thomas Baxter believes that the future for milk production is bright with promise. Because the average consumption of milk in this country before the war was far below that of many other nations, it was possible then to satisfy all the demands for liquid milk and have available about 300,000,000 gallons a year for manufacture into cheese, butter, milk powder, and so on. This surplus milk was sold at reduced prices.

Since rationing according to need, with priority to mothers, babies, and school children, has been enforced, there is not enough milk to meet the liquid demand. Consumers who really need milk have no longer to consider the length of the domestic purse.

At the present time, half the milk produced is distributed to priority consumers, who represent one-third of the population. The remaining two-thirds have to share equally the other half. Sir Thomas Baxter added that it was not difficult to foresee a demand, apart from manufacturing needs, which would absorb another 100,000,000 gallons a year.

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SCOTTISH MILK TESTING SCHEME

At a meeting in Glasgow on February 5th, the Milk Committee of the Scottish N.F.U. and Chamber of Agriculture for Scotland, after considering the terms of the recently published Scottish Milk Testing Scheme, reached the conclusion that the scheme in its present form suffered from so many major shortcomings that its introduction may give rise to serious inequalities which will not inspire the confidence of Scottish milk producers. Accordingly, an effort is to be made to arrange an early meeting with the Scottish Milk Marketing Boards with a view to concerted action being taken on the matter.

At this meeting, the Milk Boards will also be invited to have regard to evidence recently submitted to, and recommendations made by, a Special Milk Sub-committee of the Union and Chamber, which was set up to consider means for securing uniformity in the terms and administration of dairy by-laws. It is hoped that the outcome of the meeting will be that joint representations on the subject will be made to official quarters.—*Farming News.*

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The National stud, transferred to Gillingham (Dorset) from Tully, Eire, in October, 1943, showed a net profit of £31,200 in 1944, according to the latest figures of the Comptroller and Auditor-General. This compared with £4,591 in 1943.

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SCHEME FOR THE CONTROL OF DISEASES OF DAIRY CATTLE

Statement showing the Number of Undertakings notified to the Ministry of Agriculture during the Month ended February 28th, 1946

County	Undertakings Notified		Total Undertakings		
	During Month	Previously	Number	Number of Cattle	
				Cows	Heifers
England					
Bedford	—	33	33	741	415
Berks	—	89	89	3,260	2,093
Bucks	—	78	78	2,717	1,457
Cambridge	—	10	10	190	79
Chester	1	336	337	11,126	4,403
Cornwall	—	4	4	72	75
Cumberland	—	56	56	1,414	1,196
Derby	3	320	323	9,151	5,202
Devon	2	309	311	4,581	2,710
Dorset	—	66	66	2,078	1,124
Durham	—	257	257	5,491	2,237
Essex	3	218	221	6,954	4,011
Gloucester	—	91	91	2,424	1,717
Hampshire	2	379	381	10,889	7,494
Hereford	—	17	17	342	191
Hertford	—	80	80	2,349	1,544
Hunts	—	8	8	303	198
Isle of Ely	—	1	1	57	21
Isle of Wight	—	9	9	171	94
Kent	1	157	158	3,715	2,241
Lancs.	—	167	167	4,916	1,829
Leics	—	102	102	2,514	1,870
Lincs (Holland)	—	3	3	25	11
Lincs (Kesteven)	—	23	23	323	169
Lincs (Lindsey)	—	103	103	1,989	1,194
Middlesex	—	13	13	414	212
Norfolk	1	151	152	4,759	3,382
Northants	1	71	72	2,116	1,806
Northumberland	—	61	61	1,909	1,262
Notts	1	183	184	4,046	2,420
Oxford	—	42	42	1,174	1,870
Rutland	—	8	8	156	107
Salop	1	239	240	6,788	3,657
Soke of Peterborough	—	—	—	—	—
Somerset	8	240	248	6,523	3,006
Staffs	1	187	188	5,589	3,495
Suffolk, East	5	51	56	1,216	829
Suffolk, West	—	49	49	1,029	705
Surrey	1	102	103	2,020	1,396
Sussex, East	1	167	168	4,254	2,637
Sussex, West	2	108	110	3,172	1,918
Warwick	—	129	129	2,953	2,094
Westmorland	—	8	8	257	295
Wilts	—	84	84	3,388	1,585
Worcester	1	153	154	2,996	1,540
Yorks, E.R.	1	96	97	1,508	935
Yorks, N.R.	—	112	112	3,331	146
Yorks, W.R.	1	232	233	5,624	2,285
Wales					
Anglesey	—	49	49	843	600
Brecon	—	12	12	204	129
Caernarvon	—	109	109	1,714	967
Cardigan	3	31	34	613	429
Carmarthen	6	264	270	5,026	2,662
Denbigh	1	31	32	738	335
Flint	—	83	83	1,864	878
Glamorgan	—	96	96	1,543	698
Merioneth	—	9	9	117	55
Monmouth	—	54	54	1,287	712
Montgomery	1	13	14	286	245
Pembroke	—	60	60	1,163	792
Radnor	—	—	—	—	—
Totals	48	6,213	6,261	159,312	89,659

Notes.—(1) Operative periods of undertakings: 1 year, 1,570; 2 years, 425; 3 years, 4,266. (2) Undertakings renewed for further periods: 1 year, 1,788; 2 years, 219; 3 years, 635. (3) Undertakings not renewed at end of operative periods, 1,549. (4) The figures showing the number of undertakings notified during the month relate to entirely fresh undertakings and do not include undertakings renewed for further periods. Undertakings which have been cancelled or not renewed, are not included in the figures for previous notifications.

County	Undertakings Notified		Total Undertakings		
	During Month	Previously	Number	Number of Cattle	
				Cows	Heifers
SCOTLAND					
Aberdeen	—	20	20	986	448
Angus	—	17	17	654	428
Argyll	—	3	3	50	79
Ayr	—	8	8	260	202
Banff	—	1	1	120	20
Berwick	—	1	1	20	—
Bute	—	—	—	—	—
Caithness	—	—	—	—	—
Clackmannan ..	—	5	5	191	114
Dumfries	1	8	9	468	440
Dunbarton	—	1	1	60	40
East Lothian ..	—	—	—	—	—
Fife	—	28	28	1,039	507
Inverness	—	3	3	163	77
Kincardine	—	1	1	16	15
Kinross	—	3	3	60	39
Kirkcudbright ..	1	7	8	534	325
Lanark	—	7	7	252	191
Midlothian	—	—	—	—	—
Moray	—	—	—	—	—
Nairn	—	—	—	—	—
Orkney	—	—	—	—	—
Peebles	—	1	1	26	16
Perth	—	16	16	417	314
Renfrew	—	3	3	88	55
Ross-shire	—	—	—	—	—
Roxburgh	—	—	—	—	—
Selkirk	—	—	—	—	—
Stirling	—	10	10	313	283
Sutherland	—	5	5	92	44
West Lothian ..	—	—	—	—	—
Wigtown	—	7	7	361	161
Zetland	—	—	—	—	—
TOTALS ..	2	155	157	6,170	3,798

Notes.—(1) Duration of undertakings: 1 year, 35; 2 years, 10; 3 years, 112. (2) Undertakings renewed for a further period (included in column 2 of statement): 1 year, 67; 2 years, 7; 3 years, 41. (3) Undertakings expired and not renewed (not included in column 2 of statement): 233. (4) The figures showing the number of undertakings notified during the month relate to entirely fresh undertakings.

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ATTESTED HERDS

SHOWING POSITION IN EACH COUNTY AS ON DECEMBER 31ST, 1945

England and Wales

County		Attested Herds as on 31.12.45	Approximate No. of Cattle in Attested Herds as on 31.12.45	% Attested to Total Cattle
Bedford	1	29	1,675	3·74
Berks	2	202	11,809	15·87
Buckingham	3	108	6,124	6·04
Cambridge	4	40	1,924	6·4
Isle of Ely	5	6	256	1·24
Chester	6	90	4,757	1·94
Cornwall	7	135	5,362	2·12
Cumberland	8	307	16,125	7·45
Derby	9	32	1,881	1·01
Devon	10	308	12,858	3·48
Dorset	11	216	11,797	9·24
Durham	12	153	5,921	5·2
Essex	13	215	10,923	8·89
Gloucester	14	159	9,530	5·66
Hampshire	15	217	10,422	7·77
Isle of Wight ..	16	11	503	2·63
Hereford	17	98	5,417	4·47
Hertford	18	110	7,620	13·3
Huntingdon	19	8	402	1·4
Kent	20	154	7,539	6·47
Lancaster	21	116	5,984	2·04
Leicester	22	56	3,084	2·0
Lincoln (Holland) ..	23	1	41	0·14
Lincoln (Kesteven) ..	24	7	288	0·42
Lincoln (Lindsey) ..	25	12	1,039	0·65
London	26	—	—	—
Middlesex	27	10	352	4·98
Norfolk	28	107	7,096	4·18
Northampton ..	29	33	2,228	1·56
Soke of Peterborough	30	—	—	—
Northumberland ..	31	111	5,791	3·05
Nottingham	32	26	1,390	1·3
Oxford	33	171	9,779	10·45
Rutland	34	5	592	2·97
Salop	35	172	9,609	3·73
Somerset	36	357	18,233	6·25
Stafford	37	43	1,769	0·76
Suffolk, East	38	42	2,551	3·34
Suffolk, West ..	39	44	2,824	7·72
Surrey	40	159	7,189	14·74
Sussex, East	41	122	5,923	6·14
Sussex, West	42	111	5,653	8·52
Warwick	43	75	5,007	3·56
Westmorland	44	191	10,097	10·55
Wilts	45	150	11,587	6·7
Worcester	46	43	2,137	2·41
Yorks, East Riding ..	47	11	461	0·37
Yorks, North Riding	48	348	11,632	4·97
Yorks, West Riding ..	49	151	7,142	2·07
ENGLAND ..	50	5,272	272,323	4·32
Anglesey	51	19	967	1·7
Brecon	52	161	5,044	11·07
Caernarvon	53	93	3,307	5·3
Cardigan	54	2,471	37,302	49·45
Carmarthen	55	3,312	66,088	49·07
Denbigh	56	280	7,215	7·21
Flint	57	37	1,698	2·87
Glamorgan	58	104	2,858	3·7
Merioneth	59	742	14,208	33·86
Monmouth	60	113	4,472	6·93
Montgomery	61	3·8	10,539	11·16
Pembroke	62	1,458	28,836	29·26
Radnor	63	49	1,339	3·74
WALES ..	64	9,147	183,873	19·43
ENGLAND & WALES	65	14,419	456,196	6·3

Scotland

County	Attested Herds as on 31.12.45	Approximate No. of Cattle in Attested Herds as on 31.12.45	% Attested to Total Cattle
Aberdeen	55	5,809	2·86
Angus	48	4,659	8·18
Argyll	197	8,690	14·59
Ayr	1,462	93,359	65·92
Banff	14	943	1·9
Berwick	15	1,261	4·42
Bute	316	7,965	78·6
Caithness	135	1,814	7·52
Clackmannon	17	1,132	25·62
Dumfries	699	44,451	46·44
Dumbarton	96	5,799	35·8
East Lothian	12	1,412	10·2
Fife	90	7,658	13·6
Inverness	28	1,370	2·71
Kincardine	20	1,655	5·05
Kinross	19	1,318	17·16
Kirkcudbright	372	32,123	44·53
Lanark	709	40,959	43·79
Midlothian	70	3,918	17·11
Moray	23	1,831	6·6
Nairn	8	512	6·27
Orkney	155	3,316	7·62
Peebles	60	3,220	30·72
Perth	74	5,159	6·19
Renfrew	191	11,321	36·06
Ross and Cromarty	22	1,090	2·88
Roxburgh	19	1,330	4·27
Selkirk	7	444	7·59
Stirling	170	10,447	25·9
Sutherland	6	275	2·82
West Lothian	45	2,765	19·17
Wigtown	254	22,842	33·42
Zetland	209	968	11·16
	5,617	331,824	22·73

In calculating the Percentage of Attested Cattle the figures of Total Cattle Population at 4.6.45 were used.

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HIGHER PRICES FOR FARMERS

In accordance with the procedure announced in the House of Commons on December 5th, 1944, and subsequently reaffirmed and extended in the announcement of November 15th, 1945, the Agricultural Departments of England and Wales, Scotland and Northern Ireland have reviewed, in consultation with the Farmers' Unions of those countries, the general financial position of agriculture in the United Kingdom. The review indicated a declining trend in farmers' incomes combined with substantial increases in labour and other costs which have already taken place or are about to take place in pursuance of decisions recently taken.

The Government have considered the results of this review and the views of the Milk Marketing Boards on milk prices and have assessed the national requirements of home produced food of various kinds in the light of the present serious world shortages, particularly of grain. Account has also been taken of the disturbance to agricultural production caused by the need to return for a time to an increased output of cereals. In the light of these factors decisions have been reached on the prices to be guaranteed for the principal crops, for the harvest of 1947 and for livestock and livestock products for the production year 1946-47. Minimum prices have also been fixed for milk, fat cattle, and sheep for the production years 1948-49 and 1949-50, and for fat pigs and eggs for the four years ending on June 30th, 1950. The price of wheat for the 1947 harvest will be increased by 1s. 9d. a cwt., and compulsory directions will be reintroduced to secure the sowing of at least 2,500,000 acres of wheat for that harvest.

Milk prices will be adjusted so as to secure an over-all average increase of ¾d. a gallon in a full year. The special conditions which led to the granting of the war-time production bonus still exist, and the bonus will accordingly continue for a further year.

While an increased production of milk in the winter is still needed, it is also necessary that production in the late summer

should be fully maintained. In England and Wales some part of the increased price for milk will be used for improving the relative payment for milk sold in the period July to September, 1946. All the changes proposed are annual averages and any detailed adjustments of seasonal and grade prices will be discussed between departments, the farmers' unions, and the Milk Marketing Boards, as soon as possible. It is recognized by the unions that any such adjustments must not raise the yearly average prices.

Minimum prices for fat cattle, sheep and milk in the production years 1948-49 and 1949-50 will be those ruling in the production year 1944-45. The production year means in the case of fat cattle and sheep, a year from July 1st to the following June 30th, and for milk, from April 1st to the following March 31st.

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PASTEURIZATION OR T.T.?

The Political Correspondent of the *Farmer and Stock-Breeder* writes as follows, under the above heading, in the March 5th issue: "I understand that a big decision as regards the future milk supply is now at Cabinet level. For a long time the Minister of Health has been urging that the Government should make a definite move to enforce national compulsory pasteurization now that the war is over and we are within sight of a bigger output of the necessary plant. References have been given lately in these columns to the alleged preference of the Ministry of Health for pasteurized milk (even where T.T. is available) in regard to the milk in schools scheme. I understand that the Government's decision is likely to be a clear decision, that the entire milk supply must be either T.T. or pasteurized, although there is a strong demand for pasteurization of all milk. According to Mr. Ben Hinds (Vice-Chairman of the Milk Board), the Board has set itself the aim of getting all the milk sold in Britain to be T.T. milk and every milk cow on British farms an attested animal."

* * * * *

THE BUFFALO IN MALAYA

We are indebted to Major Roderick Macgregor, F.R.C.V.S., of the Veterinary Department, British Military Administration, Malaya, for forwarding the following article from the *Syonan Times* ("the Japanese imitation of the *Straits Times*") of November 20th, 1942.

Major Macgregor writes: "All the information contained therein was collected in the Veterinary Office, Raub, Federated Malay States, before the war, and the article itself consists of my own notes and drafts for the thesis I wrote on the same subject in 1939. Whole paragraphs have been printed practically unchanged —I can recognize the sentences, and you will be able to compare them with the abridged version published by you in August, 1942.

"During the Occupation, the Japanese were fond of broadcasting details of the immense help they were giving to the Malays in developing their farms on modern lines. They frequently claimed as their own the work done by our Veterinary and Agricultural Departments; but in actual fact they added nothing new and have damaged and set back our own work. This is a case in point. All the buffalo herd that we were building up from selected strains has been killed off, the breeding records destroyed and the previous work claimed as their own.

"The cutting was given to me by a friend who was in the civilian internment camp. He kept it throughout his imprisonment, in hopes that he would meet me again and be able to give it to me. This hope has been fulfilled, and I am glad to say he is now recovering his health, and returning to his previous work."

"Animal Husbandry in Malaya—2. Buffaloes"

It is generally recognized throughout Malaya that there are two types of species of buffalo in domestication. The commonest is the smaller, wide-horned, swamp-loving animal, showing little or no specialization and apparently identical with the wild buffalo of India. The other type is the larger animal, highly specialized for purposes of milk production and for work. The latter type prefers clean water and firm ground to swamp. Hitherto, it has been customary to refer to these types as Malayan Water Buffalo and to the other as Indian Water Buffalo, respectively. It would be better to refer to them as the swamp buffalo (Kerbau Sawah) and river buffalo (Kerbau Sungei), respectively.

Most of the smaller variety or swamp buffalo are kept by Malay villagers, partly for the purpose of working their padi swamps and partly as an investment of capital. It must be pointed out, however, that neither of these motives can be regarded as general throughout the country. Large areas of sawah (Padi swamp) are worked without buffalo, although the latter are available, while elsewhere it is usual to find that a man considers that he has sufficient buffalo when he has three or four head, and he will not attempt to keep more, even when ample grazing ground is available. It is clear therefore that no planned effort has been made for such livestock breeding where buffaloes are concerned.

Aids Padi Cultivation

When buffaloes are used for cultivation purposes, they are used for ploughing or puddling (melantam) the soil. The process of puddling is carried out by driving three or four buffaloes round and round the plots until the soil has been sufficiently churned up by the hooves of the animals. In many areas ploughing is impossible as the soil is so soft that the buffaloes sink up to their bellies. In other areas it is found that ploughing requires skill and the expenditure of considerable labour, whereas puddling is easy. Therefore puddling is resorted to.

The soil prepared by puddling is said to be in no way inferior to ploughed soil, and though more animals are required to puddle than to plough, less human effort is needed, and in a State where buffaloes are numerous, this does not matter. The otherwise more profitable river buffaloes are quite unsuitable for most of these sawah areas (rice swamps). They can be forced into swamps only with difficulty and are helpless if they sink above their knees, and when confronted by a bata or earth dyke to a rice plot, invariably step on it and break it down, instead of skipping over it as their swamp brothers do.

The Swamp Buffalo

Swamp buffaloes, however, have not yet been specialized and show many of the undesirable characteristics of their wild ancestors. They are by preference nocturnal in their habits, and suffer greatly from the heat if forced to work during the heat of the day. The cows in general are poor milkers. It is doubtful if the average cow is capable of giving more milk than suffices to rear one calf.

There is, however, no reason why these undesirable characteristics should not be eliminated by selective breeding, without in any way destroying the adaptability of this type of buffalo to swamp conditions. As timber haulers, swamp buffaloes of good physique find a ready sale when they are about seven years old, while those of poorer physique are slaughtered for their meat. It is quite a common sight to meet herds of these buffaloes being driven across country for miles, even through jungle, on their way to the meat markets.

The River Buffalo

The Indian river buffalo is kept all over Malaya chiefly by Northern Indian dairymen. The Malays, however, prefer the swamp buffalo and say that the milk derived from it is preferable to that of the river buffalo. The range of the river buffalo, however, in spite of such local prejudices, is quickly extending, particularly in the more developed parts of the country. It is undoubtedly superior to the swamp buffalo as a dairy animal and in certain types of jungle selected river buffalo bulls with their more massive conformation are preferred by Chinese lumbermen for timber hauling and a few of these animals are to be even seen as draught animals on the roads.

It is probable that as the country develops, the specialized Indian buffalo with its wider range of usefulness to man will tend to replace the original Malayan swamp buffalo. For many years to come, however, the latter may be expected to hold its own in the remoter rural areas, where its superior survival value under rough conditions in swamp and jungle will justify its retention as the domestic species most important to the well-being of the kampong Malay.

Scientific Control Necessary

In rural areas, where the population is Malay to a greater extent or where it is essentially Malay, the buffalo is more highly valued than the ox on account of the superiority of the former for agricultural work and the higher prices they fetch when sold for slaughter. As a result buffaloes in general are more carefully tended than oxen and there is less tendency on the part of the Malay peasant to dispose of his buffaloes without careful consideration. Legislation is necessary to prevent the excessive depletion of buffalo breeding stocks and to control the slaughter and disposal of female animals. More consideration should be given to the question of breeding, proper mating, etc., and if this is done there is no reason why buffaloes as a remunerative line in livestock breeding in Malaya should not be a successful enterprise.

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The Office of the Surgeon General of the Army microfilms 44 medical journals and distributes them within 15 days of publication to medical officers all over the world. This saves 95 per cent. of the shipping space. One 100-ft. roll of microfilm holds about 1,300 pages of magazine, yet weighs only 6 oz.—*Vet. Med.*

H.M. STATIONERY OFFICE PUBLICATIONS

The undermentioned have been publisher recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office.

	Price	Post
House of Commons Bills (Session 1945-46):		
77. Hill Farming	0 6	0 7
223. Improvement of Livestock (Licensing of Bulls) (England and Wales) (Amendment) Regulations. February 7th. (Published February 20th, 1946.)	0 1	0 2
Statutory Rules and Orders:		
281. S.8. Artificial Insemination: (Importation and Exportation of Semen and Imported Semen) (Scotland) Regulations. February 22nd.	0 2	0 3
Agriculture and Fisheries, Ministry of:		
Leaflet, Advisory No. 93. Bovine Contagious Abortion ... ... Each	0 1	0 2
Dozen	0 9	0 11

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Professor Gilbert Murray has consented to be President of the Oxford branch of the Universities Federation of Animal Welfare.

* * * * *

So far in Britain we have proceeded with great caution in developing a nation-wide service of artificial insemination. Faster progress has been made in America and also in Denmark, where average yields are considerably higher than in this country. No one will deny that the Danish farmer understands the breeding of dairy cattle and takes a great pride in his cows. It is a remarkable fact that a quarter of Denmark's cows are now inseminated from breeding stations owned and run by farmers themselves. Breeding to higher standards will not be reflected immediately in more milk, but no one should quarrel with the steps being taken to spread more widely the influence of good bulls beyond the circle of pedigree breeders.—*The Times.*

* * * * *

In the den of a female wild cat, measuring 38 inches overall, recently trapped at Camster, Caithness, there were found one dead hare, two grouse, one woodcock, and three rabbits.

* * * * *

Erratum.—In the abstract of the article by Milne, A., on The Ecology of the Sheep Tick, *Ixodes ricinus L.* (II.—Host Availability and Seasonal Activity), on page 108 of last week's issue, line 19 from head of column one, *for* "in sheep-stock-taking density" *read* "in sheep-stocking density."

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Amongst the recent inventions is a needle-less hypodermic syringe. It squirts a stream so fine and swift that the liquid penetrates the skin without the use of a needle.—*Science News Letter* (Sept. 22nd, 1945).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

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"THE SURGICAL TREATMENT OF BURSITIS OF THE EQUINE POLL AND WITHERS"

Sir,—With reference to Professor Wright's most interesting and instructive article—"The Surgical Treatment of Bursitis of the Equine Poll and Withers"—published in *The Veterinary Record* of March 2nd, I would explain that the *Br. abortus* dead vaccine was originally recommended mainly for the treatment of the enclosed, uncontaminated type of lesion.

The investigations, carried out between 1933 and 1935, indicated that the vaccine had very little influence upon open, heavily contaminated abscesses from which it was often extremely difficult to isolate *Br. abortus.* Beneficial effects were reported to have been observed in 71 per cent. of all the cases treated during the period mentioned.

In Professor Wright's two cases, Nos. 1 and 9, which were unsuccessfully treated with Brucella vaccine, the one showed an open lesion and in the other the agglutination test was negative: both instances in which the vaccine could not reasonably have been expected to produce good results.

In its original form the *Br. abortus* dead vaccine (for the purpose under discussion) was prepared from a strain of the organism which had been isolated from a poll or withers lesion.

Yours faithfully,

Orkney H. M. M. Duff.
March 9th, 1946.

* * * * *

Sir,—Professor Wright has come forward with a most useful report on his work on bursitis of the poll and withers. This shows all the logical argument and care of detail which we have come to expect from him. It is, therefore, surprising to find him using procaine hydrochloride in conjunction with sulphanilamide.

Procaine is one of many local analgesics which antagonize the action of sulphonamides (except Marfanil). This appears to be due to the close resemblance in molecular structure to *p*-amino-benzoic acid. The whole object of sulphonamide therapy is to clog the bacterial enzyme system with sulphonamide, so that it cannot take up *p*-amino-benzoic acid. This latter is essential for the multiplication of the organisms. The organism will always take up *p*-amino-benzoic acid if it is available, rather than sulphonamide. If, however, the sulphonamide is present in vastly greater amounts the organisms will take up sulphonamide instead. In the case of sulphanilamide, this must be in the proportion of one to sixteen hundred. Since procaine contains the *p*-amino-benzoic acid group the introduction of this substance into the vicinity of a wound must reduce the bacteriostatic power of sulphanilamide very considerably.

"The Medical Use of Sulphonamides" (Stationery Office), page 67, states: "In bacteriological studies of patients who are receiving sulphonamide drugs, it is sometimes necessary to add 0·5 mgm. per cent. of *p*-amino-benzoic acid to fluid culture media, so as to antagonize the action of the drug and permit bacterial growth. If *p*-amino-benzoic acid is not available, a similar concentration of procaine hydrochloride may be used."

Local analgesics which contain the *p*-amino-benzoic acid group and antagonize the sulphonamides are: Procaine, larocaine, tutocaine, butyn, anaesthesin, orthoform and pontocaine.

Those which do not contain *p*-amino-benzoic acid group and presumably do not inhibit sulphonamides are: Cocaine, tropacaine, eucaine, stovaine, nupercaine, phenocaine, metycaine, psicaine, alypin, apothesine and diothane (from Minnitt & Gillies. "Textbook of Anaesthetics").

Yours faithfully,

228, High Street, Berkhamsted. A. C. Dixon.
March 7th, 1946.

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"VESTED INTERESTS IN IGNORANCE"

Sir,—Within the last two days I have chanced to read a motion to be put to the Royal Counties Division, N.V.M.A., relative to the "giving of veterinary advice to farmers by veterinary officers of A.I. Centres," *Vet. Rec.*, January 12th, 1946, and the following:—

"At first sight a really comprehensive system of industrial research would seem disastrous to them (private consultants), though in reality the enhanced value that this would give to science would be bound to turn to their advantage. Similar objections are raised by veterinary practitioners to the extension of agricultural research, particularly in the vital question of advice given to farmers. It is the lack of any thought-out policy of research that has allowed these vested interests in ignorance to grow up."—"The Social Function of Science," J. D. Bernal, F.R.S., pp. 147, 148. I shall be very interested to see the course and conclusion of the discussion.

Yours faithfully,

HQ 21 (EA) INF BDE, W. Plowright,
P.O. Box No. 1010, Nanyuki, Capt., R.A.V.C.
Kenya.
February 25th, 1946.

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A DISCLAIMER

Sir,—It has been brought to my notice that an article appeared in the *Evening News* of March 6th in which my name was mentioned. I wish to record the fact that the article was written and published without my knowledge or permission. Quite evidently it was based on a telephone communication with a lady whom I do not know, but who I understand had been a client of my deceased partner, Mr. A. Cornish-Bowden. Even so, it is a garbled and inaccurate version of the conversation which took place.

Yours faithfully,

101, Shortlands Road, S. F. J. Hodgman.
Bromley, Kent.
March 8th, 1946.